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SOCIAL HEALTH MAINTENANCE ORGANIZATION DEMONSTRATION EVALUATION AND DATA COLLECTION PLAN

VOLUME I

APPENDIX A

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An organized research unit of the University of California, San Francisco
UCSF

SOCIAL HEALTH MAINTENANCE ORGANIZATION DEMONSTRATION

EVALUATION AND DATA COLLECTION PLAN

Prepared by

University of California, San Francisco
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Prepared for

Health Care Financing Administration

VOLUME I

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EVALUATION PLAN

In 1980 the Health Care Financing Administration, in cooperation with the Health Policy Center of Brandeis University began planning a long term care services delivery and financing demonstration program. This program combined a continuum of acute and chronic care services under a prepaid health care plan. This plan has come to be known as a social health maintenance organization or S/HMO.

Today there are four S/HMO demonstration sites in operation across the United States:

Elder Plan Incorporated (Metropolitan Jewish Geriatric Center) Brooklyn, New York

Medicare Plus II (Kaiser Permanente Center for Health Research) Portland, Oregon

Seniors Plus (Group Health Incorporated and Ebenezer Society) Minneapolis, Minnesota

SCAN Health Plan, Long Beach, California

Each of these health plans is unique in its organizational auspice, yet share the common purposes of testing the ability to attract members and to provide an expanded array of acute and chronic care benefits within a capitated budget.

The Health Care Financing Administration, at the request of Congress, has designed and commissioned a comprehensive evaluation of the S/HMO demonstration program. The evaluation is being conducted by a consortium of organizations: The Institute for Health & Aging, University of California; Berkeley Planning Associates; Center for Demographic Studies, Duke University; and Westat, Inc.

This evaluation was originally designed to investigate ten major issues:

- Selection bias in initial enrollment and in attrition.
- Utilization of specific acute and chronic care services.
- Public, third party, and beneficiary out-of-pocket expenditures for specific acute and chronic care services.
- Factors associated with decisions to enroll or not enroll in a S/HMO.
- Satisfaction with service access, quality, cost and location among S/HMO, HMO, and fee-for-service health plan members.

- Health status and mortality rates among S/HMO members and non-members.
- Level of informal caregiving and changes overtime.
- S/HMO marketing efforts, market area factors and their effect on S/HMO operation.
- The patterns of change in the S/HMO organizational form, management, and financing.
- The effects of case management in controlling service use, cost and assuring access to appropriate levels of care.

Each S/HMO began operation during the first quarter of 1985, and will operate for 42 months under the terms of the demonstration. The evaluation began its planning phase in October, 1985, and will begin its operational phase in June, 1986.

Over the course of 50 months the evaluation is required to develop a series of products. Among these are Evaluation and Data Collection Plans, Management Plan, annual evaluation reports, ten publishable articles and reproducible computer tapes. The present document is the Evaluation and Data Collection Plan. It describes the general background to the evaluation, the major research questions being investigated, and the data collection approaches which will be used. A companion document has been prepared to describe the Management Plan. The Analysis Plan for the evaluation is included in the Technical Evaluation Proposal submitted by our consortium May 9, 1985.

During the evaluation's planning phase, the original evaluation design suggested by HCFA in their request for proposal and our technical response have been operationalized and refined to recognize of the operational structure of the S/HMOs, data availability and the changing health care market place.

Activities undertaken during the planning phase include visits to each of the demonstration sites to review their management information systems and to become acquainted with their personnel and organizational structure; reviews of the demonstration protocols, quarterly reports, and other documents to become more fully acquainted with the planned and current operations of the demonstrations; telephone calls and correspondence with each site regarding enrollment procedures, assessment of the sites' experience with the Health Status Form (HSF) and Comprehensive Assessment Forms (CAFs); and pre-testing of data collection instruments.

Four issues in particular necessitated adjustments to the originally proposed study design: slower than expected rate of S/HMO enrollments; lower than expected enrollments of Medicaid eligible persons in S/HMOs; subtle but important differences

among the sites in their procedures for screening and assessing enrollees into severely impaired and non-impaired groups, and the rapid growth of enrollment in Medicare risk contract HMOs and the recognized importance of comparing these HMOs to S/HMOs.

To address these issues, we propose: expanding the study sample to include both severely and moderately impaired persons; expanding of the impaired and non-impaired fee for service comparison groups to better examine changes in health status, mortality, and Medicaid spenddown; developing an HMO comparison sample and incorporating data collected from HMO enrollees into an analysis of selection bias, consumer choice, and satisfaction; and converting the consumer choice survey from a mail questionnaire to telephone interview.

These changes have generally been accommodated within the original budget. However, some augmentation will be necessary unless adjustments are made to the design. We propose to scale back or eliminate two elements in the original proposal design to accommodate the proposed changes. Dropped from the study is an analysis of service use, and consumer choice by persons eligible for Medicaid at the time of S/HMO enrollment. There simply are too few such enrollees to evaluate. Medicaid spenddown will continue to be studied among S/HMO enrollees and the fee-for-service comparison group.

Planned for scaling back or possible elimination is a survey of informal caregivers. While this aspect of the evaluation continues to be valued and desired, current plans are to delay initiation of this survey (holding these funds in reserve) until we have had six months of experience with the personnel requirements and costs associated with monitoring an expanded functionally impaired comparison group panel. The informal caregiver survey will be eliminated entirely if these reserve funds are needed for comparison group monitoring.

The evaluation and data collection plans presented in the following discussion have been designed to create a uniform health status classification among all S/HMO enrollees and comparison group panels. These panels are representative of the S/HMO market area for both fee-for-service and HMO members.

Details on the project time table, and management are included in a separate Management Plan. The analytical procedures supporting the evaluation design are unchanged from the original proposal and have not been repeated in this document. Detailed analysis plans will be developed for each of the evaluation's publishable articles and reports by elaborating on the analytical strategy contained in our technical proposal. These specific analytical plans will be submitted to the Health

Care Financing Administration for review and comment prior to their initiation.

BACKGROUND ON THE DEMONSTRATION

The dominant form of health care delivery for Medicare beneficiaries is through private health care providers who deliver a variety of essentially acute health care services under fee-for-service reimbursement. A growing number of Medicare beneficiaries receive services through HMOs [1], which since April of 1985, have been eligible to apply for capitated reimbursement for Part A and Part B Medicare service. Most Medicare beneficiaries choose to supplement their Medicare coverage with additional private health insurance policies. These supplements generally cover service co-payments and various deductibles. Extended care and chronic care services are usually not included under existing public or private health insurance programs. As a consequence, persons in need of such care must pay directly out-of-pocket for these expenses.

The Social Health Maintenance Organizations or S/HMOs, are designed to bring acute and chronic care coverage into a single health plan. The S/HMO benefits include all the basic Medicare services as well as selected chronic care services. These services are paid for by Medicare on a capitated basis along with a premium that is paid directly by the enrollee.

The S/HMO demonstration, in its initial design was organized and financially structured to address both a well and functionally impaired group of elderly. Beneficiaries meeting state or local criteria for nursing home certifiability (NHC) at enrollment receive an adjusted Medicare capitation rate, which is higher than the Medicare AAPCC rate established for the "well" enrollees. While all enrollees are eligible for basic Medicare health care benefits, each site has developed its own criteria for who is eligible to receive chronic care benefits. As a practical matter, it is principally the availability of chronic care benefits, and the case management processes associated with them that distinguish a S/HMO from an HMO; and these features plus the capitation payment that distinguish a S/HMO from fee-for-service delivery.

The S/HMO evaluation will compare S/HMO Medicare enrollees with two other Medicare groups: (1) those who receive services in the traditional delivery system on a fee-for-service basis and (2) those who are enrolled in HMOs with capitated risk sharing contracts.[2] This allows the evaluation to differentiate an HMO effect from the S/HMO effect as well as allow for a comparison of the S/HMO group with the fee-for-service system.

MAJOR RESEARCH QUESTIONS

The evaluation has both quantitative and qualitative research components. In combination, they enable the study to explore the performance of the demonstration, and the internal operations and environmental factors affecting this performance. Ten basic questions are investigated:

1. IS THERE A SELECTION BIAS IN INITIAL ENROLLMENT AND IN ATTRITION OF THE S/HMO ENROLLEES COMPARED TO ENROLLEES IN FEE-FOR-SERVICE AND HMOS?

The key question in assessing selection bias is whether S/HMOs attract sicker individuals or a healthier population than the typical aged population within their market area. If, for example, S/HMO enrollees have higher prior utilization and expenditure patterns and poorer health status, then adverse selection has occurred and the S/HMO may have to increase its premiums, making it less competitive in attracting enrollees. If S/HMO enrollees have lower prior utilization and expenditures patterns and higher health status than nonenrollees, then favorable selection will have occurred and would thus explain differences in S/HMO utilization and costs. The determination of selection bias is critical in future rate setting and risk-sharing considerations by Medicare, Medicaid, providers and consumers.

Selection bias is of concern only to the extent that the estimated costs for serving the enrolled populations are not representative of the underlying expected costs of serving the enrolled population. If one provider attracts more of one type of health care problem and less of another than is present in the population, but if the capitation rate reflect this, then enrollment is not only "fair" in the economic sense but potentially promotes efficiency in health care service delivery.

Four types of selection bias will be examined:

- Differences in functional health status at time of enrollment;
- Differences in service use and expenditures during the twenty-four months preceding the actual S/HMO or HMO enrollment date;
- Differences in the service use and expenditures during the twenty-four months preceeding HMO enrollment for persons joining an HMO sometime between January 1, 1984 and December 31, 1984;

- Differences in attrition among S/HMO members, and Medicare beneficiaries receiving fee-for-service, and HMO health care delivery. Attrition occurs through mortality, moving, voluntary disenrollment, institutional placement, or other reasons.

In addition to documenting possible selection bias, the study (using probability samples of S/HMO, FFS, and HMO members), will also examine a range of factors affecting the decision to enroll or disenroll from specific health plans. This will be done through a consumer choice interview at the outset of the study, and a consumer satisfaction survey one year later. These issues are described elsewhere in the evaluation plan. (See pages 3-23 through 3-32 of the Technical Proposal for a discussion of the Analysis Plan associated with selection bias.)

2. IS THERE A DIFFERENCE IN UTILIZATION AND EXPENDITURES FOR SPECIFIC SERVICES INCLUDING HOSPITAL, AMBULATORY CARE, NURSING HOME, AND COMMUNITY-BASED CHRONIC CARE COSTS?

A. Hospital Utilization

S/HMO expenditures largely depend upon the utilization of specific high-cost acute care hospital services. The general question is whether the rates of utilization by and the extent of care provided to the S/HMO group differs significantly from those provided to the FFS comparison group, as well as whether the rates differ between functionally impaired and non-impaired groups of S/HMO enrollees, adjusting for risk-factor differentials.

Previous research on HMOs and Medicare beneficiaries in HMOs have shown that most of the overall differences in costs are primarily due to differences in inpatient hospital services utilization (Luft, 1981). These differences can be attributed, in part, to lower admission rates and lower lengths of stay (LOS) per admission.

A primary hypothesis is that S/HMOs will reduce both the number of hospital admissions and the length of stay of enrollees over those of a comparable group using traditional, fee-for-service care. A second hypothesis is that the number of hospital admissions and the length of stay for the S/HMO enrollees who are functionally impaired will be less than for the comparison group who are also impaired. (See pages 3-41 through 3-42 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

B. Ambulatory Care Utilization

Ambulatory care includes physician, physician extender and outpatient visits. Previous HMO research (Luft, 1981) has reported that ambulatory care does often substitute for inpatient hospital care. One hypothesis to be tested is that well S/HMO group members will have higher ambulatory care utilization and expenditures than the FFS comparison group. The study will also test the hypothesis that the functionally impaired enrolled in the S/HMO will have significantly lower ambulatory care utilization and expenditures than the functionally impaired group in the comparison sample because of the presence of S/HMO case managers.

The second set of issues in ambulatory care is whether the increase in ambulatory care in S/HMOs, if demonstrated, results from substituting for hospital care or because of better coverage benefits for ambulatory care. Data from previous studies suggests these differences are primarily due to differences in benefit coverage and not because of substitutes for hospital care (Luft, 1981). However, since the Medicare beneficiaries have the same coverage for ambulatory care in the S/HMOs as in fee-for-service plans, this should not account for the differences in this study. The participation of area physicians in other prepaid health plans, or of those who accept Medicare assignment for the FFS health plan users are expected to be important factors reducing utilization rates for the comparison group. This occurs, in part, because of expected effects of these conditions on prevailing community treatment patterns. (See pages 3-43 through 3-44 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

C. Nursing Home Utilization

The nursing home utilization and expenditure analysis will compare use patterns for those in the S/HMOs and their comparison groups, looking separately at rates for the non-impaired and for the impaired elderly. Underlying an analysis of nursing home utilization is the appropriateness of S/HMO nursing home admissions. This will be determined by examining the reliability and validity of state nursing home certification instruments and S/HMO procedures for nursing home placement. The criteria for inappropriate placement is failure to meet the state nursing home certification standards. This information will be compiled for S/HMO members and will thus provide a baseline for the appropriateness of placement among this group.

The principal hypothesis is that nursing home utilization and expenditures (both skilled and intermediate care) will be

substantially reduced for the frail S/HMO enrollees over those who are in the comparison group. This is expected to be achieved by reduced lengths of stay in nursing homes, and through substitution of community-based care for nursing home placement. (See pages 3-45 through 3-47 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

D. Community-Based Chronic Care

Do S/HMOs use community-based chronic care services as substitutes for hospital and nursing home care? Community-based chronic term care services include all long term care service benefits provided by any of the S/HMOs (e.g., nursing home, home care, homemaker, medical day care, social day care, emergency response system, respite, case management, home delivered meals, and nonmedical transportation). Generally these benefits are not covered by Medicare. In addition several other benefits not covered by Medicare are also examined: dental care, vision and hearing treatment, prescription drugs, and foot care.

The principal hypothesis is that S/HMOs will provide more community-based chronic term care services to their members than those received by individuals in the fee-for-service comparison group. If S/HMOs provide more community-based long term care services, we will examine whether these services substituted for other types of services or provided in addition to other services, i.e. hospital and nursing home services. This will be done by comparing individual and group use rates for each of these several services considered separately; and the use rates for the hospital and nursing home services controlling for the use of chronic care benefits. (See pages 3-48 through 3-49 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

3. IS THERE A DIFFERENCE IN TOTAL UTILIZATION AND EXPENDITURES (BENEFICIARY OUT-OF-POCKET AS WELL AS ALL THIRD PARTY COSTS INCLUDING MEDICARE) BETWEEN S/HMO AND FEE-FOR-SERVICE GROUP MEMBERS?

This question builds on the summation of the component service uses and expenditures of the provision analyses, three hypotheses are addressed:

- There will be no difference in total per member Medicare costs (i.e., AAPCC reimbursements to SHMOs) between S/HMO non-impaired group members and Medicare Part A and Part B payments for non-impaired fee-for-service recipients.
- Functionally impaired persons in the S/HMO will have lower out-of-pocket chronic care costs costs and a consequent a

lower incidence of spend down to Medicaid eligibility, than will the functionally impaired fee-for-service comparison group.

- Functionally impaired S/HMO members will have lower total health care costs (i.e., Medicare, private insurance, and out-of-pocket chronic care costs), then will comparable beneficiaries in the FFS system, because of the S/HMOs greater financial incentive to control utilization.

The major policy question addressed by these hypotheses has to do with the risk sharing arrangements established for the S/HMOs and whether they are appropriate and effective. The initial risk arrangements provided for a modified capitation payment level for each S/HMO enrollee, based upon the age, sex, welfare status, health status, and institutional status of the enrollees. Each S/HMO received 100% of modified AAPCC formula for its region paid by Medicare for the Part A and B members. Medicaid also agreed to pay a capitation rate for its members, although the rates varied by state and by site. In addition, Medicare and Medicaid in each state agreed to share in any costs over the premium level, the Medicare and capitation level, and the amount of risk established for each S/HMO (although the proportions of risk varied by S/HMO and by year) for the first two years. During the final year, each S/HMO site is required to be fully at risk during the first and subsequent years of the project.

This study will descriptively and statistically examine two issues related to risk sharing. First, the appropriateness of the modified AAPCC will be examined for the S/HMOs. The total actual costs and savings achieved at each S/HMO site will be compared with the AAPCC rate received for each enrollee at each site. The extent of the accuracy in kpredicting costs will be described. Alternative modification adjustments to the AAPCC will be developed and a statistical model developed to determine which method would best approximate the costs for the S/HMOs. Since the first two years of operation were in the initial phases, only data from the third year of the S/HMO operation will be used for this statistical analysis. Individual level utilization and expenditure data will be analyzed using age, sex, and health status data. This analysis will be conducted by Duke University with assistance from Tolley, Newcomer and Harrington.

Second, a descriptive analysis of the effects of the s/HMO risk sharing arrangement will be conducted describing the savings and losses for each site over the three year time period of the project. Since the initial site risk sharing was low (ranging from $150,000-$500,000 during the first two years for three of the sites), some of the sites used less constraints in spending than might have occurred had their risk sharing arrangements been

greater. Data on these issues will be collected from site visit interviews, aggregate site expenditure data from the quarterly reports, and other site specific expenditure data available. A paper will be prepared with descriptive data and statistics that will make recommendations for future risk sharing arrangements with similar types of projects.

The original request for proposal had called for an analysis of public spending and budget neutrality within the Medicaid program as well as within Medicare. Because of the limited number of Medicaid eligible persons enrolled in the S/HMO health plans, an analysis of the Medicaid population is not possible. In addition, we had planned to collect data on all out-of-pocket costs for the S/HMO and fee-for-service comparison groups. In order to made the project more manageable in terms of evaluation costs and respondent burden, we have limited the out-of-pocket data collection and analysis to chronic care costs for the impaired elderly. (See pages 3-51 through 3-55 of the Technical Proposal for a discussion of the analysis plan associated with the total cost and cost sharing hypotheses.)

4. WHY DO MEDICARE BENEFICIARIES ENROLL IN A S/HMO WHY DO THOSE WHO COULD HAVE JOINED A S/HMO EITHER REMAIN IN THE FEE-FOR-SERVICE SYSTEM OR ENROLL IN PREPAID HEALTH PLANS, SUCH AS HMOs?

In three of the four demonstration communities, S/HMOs compete with HMOs that offer a wide range of Medicare covered benefits -- often at a lower monthly premium than the S/HMOs. S/HMOs also compete with private Medicare supplementary insurance in all four sites. Aged consumers, may choose among a wide range of health care coverage options. In making this choice, do they understand the limits of Medicare coverage and the limits of Medicare alternatives? Have S/HMOs marketed aggressively? Are S/HMOs perceived by beneficiaries as attractive, in light of available alternatives?

We expect a number of factors to influence selection of a S/HMO. Among these are access (travel time and waiting time); continuity (maintaining an established physician relationship); costs of care; costs of insurance; scope of services covered; freedom to choose one's own physician; having physicians and specialists together in a group; and being able to get regular check-ups.

In addition to understanding the reasons for selecting a health care option, beneficiaries will be asked about their awareness and perceptions of available choices. These will include the specific prepaid health plans available in each demonstration site area. The respondents will be asked if they

are aware of the S/HMO, and if so, how they learned about it (e.g., advertisements on radio or print media, word-of-mouth, or other sources). From these data we will examine how marketing influenced choice of the S/HMO option.

To evaluate the impact of S/HMO marketing on enrollment, it is necessary to also understand the consumer behavior of those who did not join the S/HMO. Those who did not join the S/HMO may have had less knowledge about and exposure to information about these several health plans than do other groups. This lack of knowledge may be of more importance in their decisions than actual attitudes about the benefits or differences across plan options.

Two hypotheses will be tested: (1) knowledge about health plan options (e.g., benefits, cost) is more important to the decision to enroll in a S/HMO (in contrast to an HMO or remaining in fee-for-service), than attitudes about these options (e.g., physician of choice, geographic proximity, convenience); (2) older individuals with long-standing physicians relationships will be significantly less likely to enroll in a S/HMO, than to remain in fee-for-service. (See pages 3-73 through 3-74 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

5. ARE S/HMO ENROLLEES MORE SATISFIED WITH ACCESS, QUALITY, COST, LOCATION AND OTHER FACTORS THAN PERSONS IN THE FFS AND HMO GROUPS?

We assume S/HMOs, like HMOs, will control costs by keeping high-cost hospital and nursing home utilization rates below the rates found in traditional fee-for-service. As a result of utilization controls, S/HMOs may give enrollees who have histories of being high utilizers fewer services than they desire. We hypothesize that individuals with high health-care utilization patterns prior to enrollment may be those most likely to be dissatisfied with the S/HMO. Controlling for the effects of prior use, we also hypothesize that S/HMO enrollees on average will show a higher level of expressed satisfaction with the health care they receive than do non-enrollees.

Six broad dimensions of expressed health care satisfaction will be examined:

- Technical quality -- adequacy and appropriateness of diagnosis, treatment, and patient management
- Accessibility -- appointment waits, office waits
- Convenience -- travel distance and travel time
- Finances -- the features of cost and insurance coverage

- Continuity of care -- maintaining an established physician relationship and coordinated access to other services
- General satisfaction

Another dimension of satisfaction is reflected by the extent of voluntary disenrollments. In disenrolling, S/HMO members can join a Medicare TEFRA HMO without chronic care benefits, re-enter fee-for-service and subscribe to private supplementary insurance or health plans, or use only Medicare and/or Medicaid reimbursed benefits and choose not to purchase supplementary coverage. The study will quantitatively describe the voluntary disenrollment patterns of S/HMO members and of HMO and FFS comparison group beneficiaries; and will examine the expressed reasons for disenrollment by mailing a patient satisfaction survey to a probability sample of those who disenroll. (See pages 3-75 through 3-79 of the Technical Proposal for a discussion of the analysis plan associated with these issues).

6. ARE THERE DIFFERENCES IN HEALTH STATUS AND MORTALITY BETWEEN THE S/HMO, FFS AND HMO GROUPS?

The evaluation will use health status indicators as outcomes measures of quality of care. Two specific quality measures will be examined: change in health status (functional and mental) and mortality rates. We hypothesize the S/HMOs will have higher quality of care than FFS comparison groups as indicated by (1) a higher proportion of non-impaired S/HMO beneficiaries maintaining their functional status level overtime; (2) a higher proportion of functionally impaired S/HMO enrollees at baseline showing improved status over time; and (3) a higher proportion of functionally impaired S/HMO enrollees at baseline maintaining or improving their mental status. Comparing S/HMO members with both FFS and HMO beneficiary samples, S/HMO members are expected to have a lower rate of mortality. (See pages 3-80 of the Technical Proposal for a discussion of the analysis plan associated with these hypotheses.)

7. HOW DOES THE S/HMO INFLUENCE THE LEVEL OF EFFORT OF INFORMAL CAREGIVING?

A key principle underlying achieving a "budget neutral" community-based long-term care delivery system is building and strengthening the informal support system. Informal care networks consisting of one or two caregivers are the most prevalent type, (Stoller and Earl, 1983; Frankfather, et al., 1981), but the size of informal networks depends on the level of disability . Level of disability is also related to the living arrangements of caregivers and frail elders. Though most older persons live in their own households, those who are severely impaired are much more likely to live with others.

Two major categories of informal support can be defined: instrumental support and expressive support (Wills, 1985). Most studies of older persons have focused on instrumental services that provide impaired older persons assistance with specific tasks such as home maintenance, instrumental activities of daily living (IADL) such as shopping, transportation and meal preparation; activities of daily living (ADL) such as bathing and toileting; and mediation or linkage with formal institutions.

The subtle caring emotional processes that are provided to older impaired persons are also of critical importance. These areas of support are defined by Wills (1985) as: esteem support (allows individuals to verify or restore self-esteem); informational support (provide knowledge or guidance); status suppport (capacity to fulfill normative obligations); social companionship; and motivational support.

The evaluation will address three dimensions of informal care: a) the level of effort required by caregivers of impaired persons in both the S/HMO and FFS samples; b) the relationship between these levels of effort and the availability of formal services; and c) the relationship between the level of effort, size and composition of the informal network and case management.

The principal hypothesis is that impaired S/HMO and FFS members will have similar informal caregiving systems at baseline, but overtime S/HMO members informal caregiving assistance will be maintained or strengthened, while those of FFS members will decline. The availability of more extensive formal care services for S/HMO enrollees will contribute to improved patient functional status while resulting in respite assistance to the caregiver. Case management services are also expected to enhance this informal caregiving effect by facilitating service access. (See pages 3-67 through 3-72 of the Technical Proposal for a discussion of the analysis plan associated with the hypotheses.)

8. IS THE LEVEL OF CAREGIVER BURDEN AFFECTED BY THE PRESENCE OF A CASE MANAGER AND FORMAL CHRONIC CARE SERVICES?

Complementing the analysis of client reported instrumental and expressive informal caregiving, is a desire to understand the burden of caregiving from the caregiver's perspective. A number of factors may operate to enhance or mitigate burden. Among these are dependence levels of the care recipient, the level of physical, financial, and emotional effort required to support the individual; and the nature, duration, and quality of assistance available.

Two hypotheses are of particular policy interest: (1) the presence of formal care services (e.g., S/HMO chronic care benefits) will contribute to diminishing caregiver burden without eroding the level of informal care provided; (2) the presence of a case manager will further alleviate caregiver burden by providing emotional support, facilitating access to appropriate patient services and by expanding and diversifying the informal caregiving system available to the impaired patient.

While we believe that studying caregiver perceptions of informal caregiving burden and of the case manager's role in allocating burden are desirable, a research approach has not yet been finalized within the evaluation plan. Given current resource levels, we will implement this analysis only if the health status and service use monitoring activities among the fee-for-service functionally impaired comparison group are less time consuming and costly than presently anticipated.

9. WHAT IS THE MARKET ENVIRONMENT IN WHICH THE SHMOs OPERATE AND HOW EFFECTIVE HAS THE SHMO BEEN IN MARKETING ITS PLAN WITHIN THE CURRENT ENVIRONMENT?

Each S/HMO faces different and rapidly evolving health care market environments. Dynamic contextual factors within each market area include the supply of hospital beds, and physicians; Medicare assignment rates; market share of prepaid health plans and private insurance carriers; and rate of market entry of Medicare HMOs and CMPs. These environmental factors are expected to affect the ability of each S/HMO to market its services.

Effective marketing is crucial to S/HMO enrollment. S/HMOs use a variety of marketing approaches, including mass mailings, newspaper, group presentations at senior centers or senior housing, open houses, and endorsement by local senior citizens councils and groups. The resources allocated to marketing varies across sites in terms of personnel, contractual services for marketing, advertising budgets and expertise. The practices, resources, and the content of the marketing materials along with the target groups to which they are directed will be studied and compared with the marketing techniques used by major health plan competitors in each S/HMO market area.

The analytical concern is to document marketing approaches which seem to be cost effective in attracting enrollees. One hypothesis is that S/HMOs within highly competitive market environments face greater difficulty and expense in attracting S/HMO enrollees. A second hypothesis is that the targeting of marketing resources to specific local groups (both senior organizations and employer/union group enrollment) will produce higher enrollments, than other strategies. (See pages 3-83 of

the Technical Proposal for a discussion of the analysis plan associated with these issues.)

10. WHAT ARE THE ORGANIZATIONAL, MANAGEMENT, AND FINANCING STRATEGIES USED BY THE S/HMOs?

While the S/HMOs incorporate many of the characteristics of traditional prepaid plans, there are striking differences across the four demonstrations in their historical evolution, sponsorship, organizational structure, financing, and management. Case studies will be conducted to examine the question of what organizational factors contribute to an "effective" S/HMO?

We will focus on five elements of the S/HMOs as organizations: social structure, participants, goals, financing, technology; and how these are influenced or affected by the economic, political and institutional environments in which the S/HMOs must operate.

"Social structure" consists of the formal sponsorship and organization, in addition to relationships and norms which guide the operation of the organization. These include such formal elements as procedures manuals and contractual relationships; and informal elements like practice patterns and referral networks. How do these structures change and evolve overtime? Of particular importance are the relationships between the management and treatment of acute care service use, and the management and treatment of chronic care. Is one organizational form more effective in assuring access to care or controlling the level of use than the others? Is one more effective in facilitating communication and cooperation across levels of care; or across individual providers than another? One hypothesis is that a S/HMO located within an existing HMO organization will experience faster enrollment growth, be more successful in controlling utilization and expenditure of enrollees, have less start-up costs, and have lower management costs per enrollee, than new, free-standing S/HMOs.

"Participants" include the various administrative, professional and support staff employed directly within the S/HMO, or who are affiliated with it because of service contracts or other formal relationships. Do the various S/HMOs develop similar or unique cadres of staff? How do S/HMO staffing patterns relate to their organizational auspice, and the specialization of tasks? How does it change as the organization matures in its daily operation?

It is hypothesized that S/HMOs, whose administrators lack experience in HMO management will have higher management cost, greater staff turnover, and higher utilization rates per enrollee

than S/HMOs with experienced administrators. A corollary hypothesis is that enrollee utilization and expenditure levels and S/HMO administrative cost will decline as the S/HMOs management gains experience.

- "Goals of the organization" are the desired ends toward which the S/HMO strives. These include such matters as enrollment targets, unit cost or per member cost efficiency, service access/convenience, and quality of care. We are especially interested in differentiating organizational development goals from system maintenance, service quality, and political advocacy goals. The relative emphasis placed on each of these types of goals is expected to be influenced by the S/HMOs structure, staffing and environment. Is there consensus among S/HMO staff members about the organizational goals? Do these goals change over time? Which organizational participants emphasize which goals? Are these competing goals within the S/HMO organization or its parent organization? One hypothesis is that where a S/HMO or its parent corporation has competing or conflicting goals, the S/HMO will perform poorly in terms of enrollment, management and staff stability.

"Financing" addresses an understanding of those policy decisions establishing benefit structures, premium levels, cost sharing formulas, and risk sharing arrangements that ultimately determine S/HMO financial performance. The evaluation will describe these decisions and will summarize the amount and nature of start-up costs, the allocations of administrative funds for marketing and other S/HMO activities, and the mix of expenditures for acute and long term care services. It is hypothesized that those S/HMOs not experienced in the financial management of HMOs will have higher start-up costs, higher costs per enrollee and higher total costs. In addition, S/HMOs investing higher proportions of their own (rather than Medicare's) resources in the development of the program will experience lower costs per enrollee and lower health service utilization than those investing less such resources. Further, it is expected that the following financial management decisions will be associated with higher start-up costs, higher costs per enrollee, and higher administrative costs per enrollee: reimbursement of providers (especially physicians and hospitals) on a cost basis, low premiums relative to similar benefits in other plans, low cost sharing arrangements relative to other plans, low risk sharing on the part of the S/HMO, and low marketing expenditures per target enrollee.

"Technology" is the S/HMOs expertise in conducting its routine business. This involves the adequacy of management information systems and utilization control processes, and manageability of contractual or other relationships with care

providers. It is expected that the S/HMOs will develop and refine technologies at different rates. Does the presence and operational status of any technology seem to be especially critical to the operational efficiency and effectiveness of the organization? Which, if any, technologies seem to be incidental to operational efficiency? Which technologies are used as a substitutes for staff functions? (See pages 3-81 through 3-82, and 7-83 through 3-89 of the Technical Proposal for a discussion of the analysis plan associated with these case studies.)

11. HOW EFFECTIVE IS CASE MANAGEMENT IN CONTROLLING UTILIZATION, ASSURING ACCESS AND APPROPRIATE SERVICES, AND CONTROLLING COSTS?

The objective of S/HMO case management is to reduce fragmentation in service delivery and to integrate acute care and long-term care services. The S/HMOs case managers assess enrollees' functional status, develop individualized care plans, serve as client advocates, coordinate services, and monitor service use. These functions place the case manager in the role of resource allocator, especially for chronic care benefits. Since expenditures for the expanded long-term care benefit are constrained, S/HMO case managers must target these resources in the most cost-effective manner to produce acceptable clinical outcomes for enrollees. The process by which the S/HMO case managers translate enrollee needs into services is a critical element in the S/HMO delivery model.

The evaluation of S/HMO case management is divided into two major areas: the process and the outcomes of case management.

- The process evaluation includes an assessment of the goals, objectives and components of case management, as well as a limited analysis of the case management decision-making process. Specific process evaluation research questions to be addressed are: Who (in the S/HMO) does case management? What is the case manager's scope of authority? How does the S/HMO determine which enrollees are case managed? Who within the S/HMO makes this determination? How is the case management process connected to the utilization of medical (acute and ambulatory) and long-term care services? What barriers prevent S/HMO's from meeting service needs identified by case managers? How does the S/HMO attempt to overcome these barriers?

- The case management outcomes evaluation will address three broad questions: Who in the S/HMO receives case management services? How effectively are the S/HMO enrollees' service needs met? What are the costs of case management? (See pages 3-53 through 3-66 of the Technical Proposal for a

discussion of the analysis plan associated with this case study.)

SAMPLE DESIGN

Basic to understanding the evaluation plan is appreciating the populations from whom data will be collected and analyzed. Figure 1 lists the samples and study area for each of the evaluation's experimental and comparison groups. The experimental group includes S/HMO functionally impaired and non-impaired enrollees. Similar persons form the fee-for-service comparison group. This is the basic sampling design specified in the original request for proposal. These samples are used in the analysis of health status at baseline, health status changes overtime, health care expenditures and utilization overtime. Subsamples from these primary samples are used in health choice, satisfaction and the informal caregiver survey. Figures 2 and 3 show the planned sizes for each of these various samples.

These samples have been enriched by including TEFRA HMO enrollees as a comparison sample. The HMO sample is used for comparisons of health status at enrollment and prior health care expenditure use patterns prior to this enrollment. A subsample from this group is also used in the health plan choice, and health plan satisfaction analysis. HMO enrollees have not been included in all study areas because of budgetary constraints in data collection, and because of the absence of complete Medicare billing histories after enrollment in an HMO.

This section of the Evaluation Plan has been organized according to the study's primary samples and subsamples. Each sample is described in terms of the number, source of cases, statistical power and the rationale underlying any departure from the original sample design. The specific procedures used in obtaining data from these samples is discussed separately in the Data Collection Plan which follows.

In addition to these samples, the research design uses secondary data on the total Medicare beneficiary population in each of the study communities, and conducts case studies of the four S/HMO programs. The data collection activities associated with these tasks are also discussed in the Data Collection Plan section which follows.

Figure 1

EXPERIMENTAL AND COMPARISON GROUP SAMPLES AND STUDY AREAS

S/HMO Impaired and Non-Impaired
Enrollees Experimental Sample

- Health status at baseline and selection bias
- Health status changes over time
- Health care expenditures and utilization
  24 months prior to enrollment
  24 months after enrollment

- Health choice (all impaired, subsample of non-impaired)
- Health plan satisfaction (all impaired, subsample of non-impaired)
- Informal caregiving (impaired group only)
- Disenrollee Survey (all persons disenrolling from S/HMOs between 6/1/86 and 5/31/86)

Impaired and Non-Impaired Fee for Service
Medicare Beneficiaries Comparison Group

- Health status at baseline and selection bias
- Health status changes over time
- Health care expenditures and utilization
  24 months prior to selection
  24 months after selection

- Health choice (all impaired, subsample of non-impaired)
- Health plan satisfaction (all impaired, subsample of non-impaired)
- Informal caregiving (impaired only)

Impaired and Non-Impaired Medicare Enrollees
in Risk Contract HMOs Comparison Group

- Health status at baseline and selection bias
- Health care expenditures and utilization
  24 months prior to enrollment (all impaired, subsample of non-impaired)

- Health choice (all impaired, subsample of non-impaired)
- Health plan satisfaction (all impaired, subsample of non-impaired)
- Health plan disenrollees (a sample of risk contract HMO disenrollees between 6/1/86 and 5/31/87)

Figure 2

PLANNED EXPERIMENTAL AND COMPARISON GROUP SAMPLE SIZES

Study Site	Expected Impaired Interviews	Expected Non-Impaired Interviews	Total Expected Screens
Brooklyn			
o FFS	200	1403	1603
o S/HMO	180	1030	1210
Long Beach			
o FFS	200	1900	2100
o HMO	100	600	700
o S/HMO	240	1350	1590
Minneapolis			
o FFS	190	1465	1655
o HMO	100	600	700
o S/HMO	170	960	1130
Portland			
o FFS	421	3409	3930
o HMO	100	600	700
o S/HMO	600	3400	4050

Figure 3

PLANNED CONSUMER CHOICE AND SATISFACTION SUBSAMPLES

Study Site	Expected Impaired Interviews	Expected Non-Impaired Interviews	Total Expected Interviews
Brooklyn			
o FFS	150	200	350
o S/HMO	150	200	350
Long Beach			
o FFS	150	200	350
o HMO	100	200	300
o S/HMO	150	200	350
Minneapolis			
o FFS	150	200	350
o HMO	100	200	300
o S/HMO	150	200	350
Portland			
o FFS	150	200	350
o HMO	100	200	300
o S/HMO	150	200	350

S/HMO Enrollment: Impact on Sample Design

Sample development and data collection plans are heavily influenced by S/HMO enrollment levels and the prevalence of enrollee impairment. In the original demonstration design, each S/HMO site planned to enroll at least 4000 persons which included an estimated severely impaired population of approximately 200 nursing-home-certificable (NHC) cases at the time of enrollment. NHC cases receive a higher Medicare capitation rate. The number of severely impaired (i.e., NHC) at enrollment, plus any person who became NHC after enrollment, establish the maximum sample size of severely impaired persons in the experimental group. Thus in the original demonstration and evaluation design a total population of 800 NHC persons at enrollment and perhaps another 400 who became NHC sometime during the 24 month period after enrollment was expected.

Due to a variety of factors, the sites have generally had slower enrollment than planned. Total enrollment on June 1, 1986, was about 8,600, or about half the planned level. Similarly, the number of NHC persons, approximately 200, was half the number expected.

In response to these circumstances, we have taken three steps to expand the impaired group sample size and maintain statistical power for the evaluation. First, primary data collection was delayed three months to allow the sites more time to build enrollments. Second, S/HMO enrollment accretions through June 1, 1986 have been included in the sample frame, again to build total and impaired member enrollments. Third, the study design was modified to broaden and standardize the definition of impairment. This last modification creates a common impairment classification across all sites, which is more broadly inclusive of persons with functional impairments than are NHC criteria, and one which is consistent with impairment classifications used in other recent national studies of the aged. Without such modifications the study would have been less able to combine or pool cases across sites, and its generalizability to functionally impaired populations would have been reduced.

In addition to nursing home certifiable persons, our broader impairement definition adds two important subgroups: (1) the severely impaired -- but non-nursing home certifiable group, and (2) moderate impairment levels. The criteria ued for making these classifications were adapted from the 1982 National Long Term Care Survey. Our criteria are shown in Figure 4.

Figure 4

IMPAIRMENT CLASSIFICATION CRITERIA

Severe Functional Impairment

- Must stay in bed all or most of time; and/or
- Unable to perform one or more activities of daily living (ADL) without assistance (e.g., eating, getting in or out of chairs, toileting, dressing, or bathing)

Moderate Functional Impairment

(If not classified in severe group, but having one or more of these conditions.)

- Unable to perform three or more instrumental activities of daily living (IADLs) without assistance (e.g., prepare meals, do laundry, light housework, shop for groceries, manage money, take medicine, make telephone calls);
- Unable to perform two or more IADLs without assistance and having limitations in mobility (e.g., must stay in the house all or most of the time, or needs the help of another person in getting around inside or outside the house).
- Unable to do at least two of the following: light house work, shopping for groceries, prepare meals; or unable to take medications or make telephone calls without assistance; or unable to get around inside the house without assistance.
- Problems with severe memory loss; as reported by a proxy respondent
- Using a wheelchair or walker;
- All cases considered by the S/HMO, as impaired, on a basis other than the health status form, will also be classified as moderately impaired. Health status assessments occur at the time of enrollment. This status may change over time and not be reflected in the HSF data set. Consequently any other data available within the S/HMO to reflect the health status of its numbers at a given time is also considered to be an appropriate basis for health status classification.

Non-Impaired

- All those not identified as severely or moderately impaired.

Prior to finalizing these impairment criteria, we reviewed the existing application forms, health status forms (HSFs) and Comprehensive Assessment Forms (CAFs) used by the S/HMO sites to measure functional impairment; and we had discussions with the case management coordinators at each site about the HSF items they use to trigger a comprehensive assessment. Our health status screening interview form, thus includes items recommended by one or more of the sites as CAF triggers. It also includes minor language changes to some questions, as well as adding or eliminating items found on the S/HMO forms.[4] (The specific changes are shown in Appendix P.) Complementing these activities we applied these criteria to the HSF data from two of the S/HMO sites to identify the number and proportion of people who would be selected on the basis of these criteria. Moreover, during the comparison group screening interviews the rate of persons classified on the telephone interview as impaired but not found to be impaired after an in-home assessment were carefully monitored in order to eliminate criteria producing an excessively high rate of "false positives."

Inclusion of the additional severely and moderately impaired subpopulations as defined by our criteria will minimize the chance of misclassifying a comparison sample respondent during the initial telephone screening. The use of more restricted criteria in the initial screen would reduce the range of persons getting in-home visits, and consequently place an enormous burden on the telephone interviewers to adequately assess the cognitive ability of the respondent and whether or not the respondent properly understood every question in the screening interview. The S/HMOs, because of their on-going clinical relationship with enrollees have a built in process which corrects for misclassification on intake.

Anyone with a severe or moderate classification based on the telephone screening interview classification will receive an in-home assessment. Our pretesting of the telephone screening instrument confirmed the importance of in-home interviews across a broad range of respondents with impairments. Such interviews helped clarify inconsistent answers across the functional classification question sets in the telephone instrument. Furthermore, these broader criteria were found to minimize the likelihood of misclassifying an individual as non-impaired during the screening interview. The beneficiary's actual impairment classification for purposes of continued tracking and analysis will be based on information obtained from the in-home interview; corrected for the false positives.

Inclusion of both severely and moderately impaired persons in the experimental and comparison group samples has one additional benefit for the evaluation: It expands the study's ability to focus attention on a population with a potential for a high transition rate between impaired and non-impaired status.

It is reasonable to hypothesize that a S/HMO with its case assessment, case management capability, and potentially more sympathetic medical staff, should be expected to perform differently in the overall treatment of high risk populations than might either a HMO or the fee-for-service system. Augmenting the NHC severe population with persons in these other high risk groups strengthens the analytic design by allowing a more full examination of S/HMO influence or effects across the range of its most vulnerable members -- whether they currently receive chronic care benefits or not.

Another high risk group will also be given special attention in our case tracking -- persons with two or more hospitalizations in the previous 12 months. Such persons generally do not fall into severe or moderate functionally impaired groups based on the HSF data available for the S/HMO enrollees or the comparison group sample. Although these cases are not considered by us as impaired for the purposes discussed here, they are high risk cases and will be monitored for changes in status over time.

S/HMO Enrollments and the Impaired S/HMO and FFS Samples

Table 1 shows the number of severely and moderately impaired cases among S/HMO enrollies as of June 1, 1986. These estimates are based on the HSF data, and the additional persons classified as impaired on the basis of more recent clinical information. Moderately impaired classifications shown have not been verified with an in-home assessment.

Table 1

S/HMO Enrollment and Estimated Impaired Enrollees
June 1, 1986

Site	Severely Impaired	Moderately Impaired	Total Impaired
Brooklyn	52	103	155
Long Beach	110	245	355
Minneapolis	83	173	256
Portland	201	626	823
	446	1147	1593

S/HMO Impaired Sample. As seen from Table 1, the inclusion of the broader criteria for the moderately impaired, in combination with the severely impaired, produces a four-site pooled sample of 1600 functionally impaired S/HMO enrollees as of June 1, 1986. Roughly half of these impaired enrollees are Kaiser-Portland members. Inclusion of these criteria exceeds the originally planned target sample size of 800 frail cases (or 200 per site). Should all sites remain in the demonstration, and 900 to 1200 members continue to be classified as impaired after a comprehensive assessment, the study's statistical power (at 90%) will be great enough to detect a difference of 5 to 7 percentage points between the experimental and a control group of approximately equal size. While this is only a marginal improvement in sensitivity over an 800 case design, the increased sample size gives the study a contingency reserve of cases should a higher than expected rate of sample attrition occur over the 24 months of the study panel tracking.

FFS Impaired Comparison Group. The FFS moderate/severely impaired comparison sample has been planned to be approximately equal in size to the number of severe/moderate cases enrolled in each S/HMO. Equal sample sizes between the experimental and comparison group maximize the statistical power of the analysis within the constraint of the maximum number of moderate/ severe SHMO enrollees available for study. Thus, approximately 1,000 moderate/severe cases are planned for the FFS impaired group, screened from a sample of 16,600 beneficiaries and 11,500 completed interviews. (The distribution of these cases among sites is shown in Table 3 in the Data Collection Plan.) This allows a margin of error in the design should there be a lower

than expected impairment prevalence rate in the community or if the cooperation rate is below expectations.

The sample has been selected to represent a probability sample of Medicare beneficiaries receiving fee-for-service delivery within the S/HMO market area. This sample frame reflects a modification over the original RFP which had specified a sample matched to the attributes of the S/HMO enrollment. A probability sample has been drawn based on practical and analytical considerations. Among the practical considerations are (1) S/HMO enrollment, and the enrollees to be included in the experimental group sample were not fixed until June 1, 1986 (May 1, 1986 in Portland). This late accretion date was needed to help build the number of impaired enrollees. (2) The management information systems at some S/HMO sites were not yet fully able to generate demographic and functional status classifications of their membership until later summer 1986 -- thus making it difficult to obtain needed matching profiles in a timely manner. (3) Medicare records showing the age, sex, zip code of residents of S/HMO, HMO, and FFS beneficiaries lag one to three months behind actual S/HMO and HMO enrollments; thus introducing sample frame error into a design which is built on enrollee attributes. (4) S/HMOs were engaged in various marketing strategies -- each one with the potential of attracting a different segment of the eligible population -- thus raising the potential for marked shifts in their membership while the experimental group sample was still being developed.

Analytically, we preferred probability samples simply because their generalization to a larger segment of the aged requires less adjustment and sample weighting -- steps that would diminish statistical power.

Various alternatives to a simple probability sample were considered. These included a case control type design with an age/sex stratification to assure equal numbers of female and male cases in each of several age groups. Such a design would strengthen the ability to assess differential effects by gender and age. Age/sex stratification was not used because this same stratification among in the S/HMO enrollee group -- especially among the impaired -- would not be possible, given the relatively small number of such enrollees and the analytical necessity of selecting all impaired cases.

Another design considered was stratification based on the zip code area enrollment penetration rate of the S/HMOs. Such stratification is intended to control for geographic or ecological factors that might be associated with the residence of the experimental group (e.g., income, ethnicity, proximity to treatment centers or other services). Market penetration rate

stratification was omitted because the relatively low S/HMO enrollments in three of the four communities produced small numbers of members from any zip code area. This coupled with the on-going marketing and accretions of S/HMO enrollees made penetration rates unstable and subject to marked changes within our sampling time interval.

The use of comparison group sample sizes matched to the S/HMO moderately and severely impaired enrollees results in an unequal number of cases to be selected from each community. In fact, Portland, under this plan, represents just over half of all impaired S/HMO and FFS cases. A greater percentage of the sample from Portland will not result in unresolvable analytical problems. We will analyze both unweighted data and cases weighted to compensate for Portland's overrepresentation. An unweighted analysis reflects the affects observed within all S/HMO enrollees considered together, and in a similar comparison group population. A weighted analysis would increase or decrease the contributions of one or more sites to approximate the results that could be expected under these new assumed conditions. For example the Portland enrollee number might be reduced by weighting procedures from 51% to 25% of the sample, under the assumption that all sites are of equal size. Weighting, in general, results in some loss of statistical power. However, this loss is less than the statistical power level that would be present if the study design had been limited to a smaller sample.

The use of weighted or unweighted cases is influenced by the nature of the question being investigated and the relative homogeneity across sites. Generalizing the analytical results to a hypothetically larger population of S/HMOs, or to some specific type of S/HMO requires a weighted analysis to adjust for specific site characteristics. Similarly, if local effects are found in the analysis, the S/HMO site weights would have to take into account these differential effects. Without such adjustments site or environmental characteristics may be mistakenly attributed for a S/HMO effect.

A Medicare eligibility tape containing the names, addresses, age, Medicaid status, HMO enrollment dates, and HMO identifying numbers for each beneficiary in the S/HMO market area is the basis for identifying the sample. To be included in original the fee-for-service sample frame a person must be:

- age 65 or older;
- not a member of a HMO or S/HMO as of March 1, 1986;
- not receiving Medicaid as of March 1, 1986;

Medicaid recipients have been excluded from the sampling frame because the number of such individuals enrolled in each S/HMO is so few that statistically significant analysis of this subgroup will not be possible. S/HMO enrollment listings and HMO enrollment listings through March 1, 1986 were screened against this sampling frame to minimize misclassifying S/HMO and HMO enrollees into the fee-for-service sample.

In October 1986 a supplemental sample was drawn for Brooklyn, Long Beach, Minneapolis, and Portland. Individuals in the original Medicare eligible population were again screened against the above shown criteria, updated to October 1, 1986.

Power Analysis for the S/HMO and FFS Impaired Group Samples. Two factors beyond S/HMO enrollment levels and impairment prevalence in the study communities influence the impaired group sample size determination. These factors are:

- The expected proportion of persons within the SHMO program who will be classified as high cost or high service users;
- The proportion of persons in the fee-for-service system who are similarly classified.

These factors have been arrayed on a series of power tables shown in Appendix A. These calculations assume binominal rather than continuous variables. Consequently, they likely underestimate the true statistical power, but they offer a fairly conservative "worst case" bench mark for assessing the statistical viability of the evaluation design. Separate power calculation results are reported for each of a series of expected sample sizes.

Assuming that the number of impaired persons in the S/HMO and FFS comparison group ranges from 900 to 1200 cases in each group (i.e., the planned impaired sample size), there is a high likelihood of being able to detect at at least a 5 point difference between the S/HMO and comparison group samples in an analysis using pooled cases across all sites. This is true in all cases where the proportion (up to 10%) of the S/HMO impaired enrollees are classified into a criterion group -- in this instance high cost users. If the S/HMO high cost use proportion is 20%, the 90% power level is present only when differences with the comparison group reach or exceed 7 points (i.e., when less than 14% or more than 21% of the comparison group cases are in this same criterion group).

The power levels and point difference sensitivity generally hold at an ability to distinguish a 7 point difference between the experimental and comparison group as the number of cases is reduced. For purposes of these calculations the maximum relevant

reduction is about 50% (the assumed impaired group attrition over the 24 month tracking period).

For site specific analyses (i.e., where a pooling of cases is not done) the power levels drop substantially, except in Portland. The magnitude of differences between the S/HMO and the FFS comparison group will generally have to climb to between 9 and 11 points in order to maintain 80% or 90% power levels at baseline. Attrition over a 24 month tracking period will lower sensitivity even further. Having said this, it is nevertheless important to bear in mind that we have used very conservative power calculations. Power levels will actually be somewhat higher using continuous measures. Also, for some analyses we will be using multiple time intervals as the unit of analysis rather than individual cases. This will increase the effective sample size and also the power level.

In short, a pooled analysis of a S/HMOs effectiveness based solely on the number of moderate/severely impaired enrollees, available, as of June 1, 1986 and a pooled functionally impaired FFS comparison group of approximately equal size produces an adequate number of cases for statistically significant analysis. This is true given existing enrollment levels, projected enrollment levels through June 1, 1986, and when the restrictive prevalence rate of those with severe impairment is assumed to be 11% of the population. Site specific analyses looking only at the impaired groups has a lower, yet reasonable likelihood of showing statistically significant results beyond the baseline period, when using cases as the unit of analysis. Time interval measures, such as "per member month," when used as the unit of analysis can be expected to yield a somewhat more robust and sensitive statistical power.

S/HMO and Fee-for-Service Non-Impaired Samples

The individuals constituting the non-impaired S/HMO and FFS beneficiaries are largely a residual group. They are derived from the casefinding efforts undertaken to locate the impaired sample. Table 2 shows the expected number of non-impaired cases to be identified during this case finding.

Table 2

EXPECTED NUMBER OF NON-IMPAIRED SHMO AND FFS CASES

Sites	SHMO	FFS
Brooklyn	1334	2077
Long Beach	1431	2553
Minneapolis	994	1988
Portland	3300	3877
	7059	10495

The study has at least two options when considering the number of non-impaired cases expected to be available. The evaluation RFP had called for equal sample sizes of 300 such cases at each site. Such a design is efficient in that it produces a sample with minimum cross site variation, and generates a group (particularly if pooled) which can be monitored overtime at relatively low cost. With a sample of this size, the study's statistical power (at 90%) would be great enough to detect a difference of 3 to 5 percentage points between the S/HMOs and the FFS non-impaired group.

However, limiting the design to this small number also forecloses analytical options. In particular it decreases the number of sample subjects within important transitional populations (e.g., death, health status changes, Medicaid spend down). Analyses of these transitional groups are much more feasible if a larger sample size can be maintained in the design over time. Because these transitional populations reflect important quality of care, selection bias, and budget neutrality policy concerns, we have elected to revise the original sample plan and retain all S/HMO non-impaired enrollees (i.e., those with active S/HMO memberships as of June 1. 1986), and all FFS non-impaired persons identified in the FFS sample casefinding survey. This will produce a S/HMO non-impaired group of about 7000 persons at baseline, and a FFS baseline non-impaired group of about 10,500 persons.

Inclusion of these larger samples is obtained with essentially no increase in screening cost, as this cost is incurred during the impaired group case finding. Moreover, the costs of monitoring these cases overtime is minimal, as most of the data is obtained from secondary sources.

Power Analysis for the Non-Impaired S/HMO and FFS Samples. The power calculations for these samples parallels the calculations discussed previously for the impaired groups (these can be found in Appendix A.) At the minimum level of 1200 cases per group pooled across sites, the sample size has the ability to distinguished at least a 5 percentage point difference between the S/HMO and FFS comparison at 90% power. An increase in these samples to the 6700 and 7400 persons raises the statistical power to 99%, and yields an ability to distinguish at least 3 percentage point differences between the two groups.

Within-site comparisons are also possible among the non-impaired samples. Under the condition where all non-impaired cases are selected from both groups, 90% power levels are present along with an ability to distinguish differences of 5 percentage points or more. This is true both at baseline and over 24 months.

Using a non-impaired sample of 300 cases per group per site diminishes the statistical sensitivity to 7 points at baseline (and roughly 90% power) and between 9 and 11 points (at 90%) after 24 months.

HMO Impaired and Non-Impaired Comparison Group

An HMO comparison group sample patterned after the fee-for-service comparison group was not included in the original RFP or evaluation design. However, an effort has made been to revise the design and to distinguish HMO enrollees from S/HMO enrollees, and HMO enrollees from those in fee-for-service. The new design conducts telephone interviews with a probability sample of 1000 risk contract HMO members in each of three S/HMO communities. All beneficiaries selected in the sample receive the same health status screen as the fee-for-service sample. A subsample of about 300 in each site will also receive a health choice interview and a satisfaction questionnaire. This subsample is discussed in the following section.

The HMO population within any S/HMO market area consists of a variety of sub-groups. Among these are all HMO members regardless of enrollment date or type of HMO contract; HMO members enrolled in Medicare risk contracts, regardless of enrollment date, persons who joined a TEFRA HMO for the first time during the period since the S/HMO has been in operation; and persons who recently converted from a non-risk contract HMO to a risk contract membership.

Using the Medicare Health Insurance Master Record files, and the Group Health Plan Master File, we identified all Medicare beneficiaries who meet the following criteria for inclusion into the HMO comparison sampling frame:

- Age 65 or older
- Live in the S/HMO market area
- Enrolled in a Medicare risk contract HMO
- Eligible HMO risk contract members have been further divided into two groups: those enrolling between January 1984 and December 31, 1984, and those enrolling in the period October 1, 1985 through March 1, 1986.

The January to December 1984 group produces a comparison group of those joining HMOs during the originally planned S/HMO start period. This period is interesting to the evaluation as many elderly persons joined HMOs for the first time during this period -- and in three of the study communities there were marketing efforts being conducted by risk contract HMO demonstration projects. Did these organizations differentially attract a healthy group of elderly? What kind of potential HMO enrollee pool remained for the S/HMO to recruit enrollees -- one year later -- after the start-up delay in obtaining Office of Management and Budget (OMB) approval for the S/HMO demonstration?

The October 1, 1985 to March 1, 1986 period includes persons making HMO enrollment decisions since S/HMOs have become operational and have actively marketed. The six month time interval for this latter group was chosen to maximize the respondents' memory recall concerning their HMO enrollment choice decisions. Of these two subsamples, the 1984 HMO sample will be studied using secondary billing history data. The latter group are the HMO group from whom primary interview data will be collected. It is this group that is referred to in this document as the HMO comparison sample. Both groups will be used in the analysis of selection bias looking at the differential expenditure and service use histories during the two years prior to enrollment in these health plans.

Figure 5 lists the TEFRA risk contrast health plans operational in the S/HMO market area during the 1984 and 1985 period and their Medicare enrollments. Note that no such plans were operational in Brooklyn, New York during this period.

Figure 5

RISK CONTRACT HEALTH PLANS
IN S/HMO MARKET AREA 1984 AND 1985

Name	Name
Portland, Oregon	Long Beach, CA (cont'd.)
Blue Cross/Blue Shield (First Choice)	United Health Plan Watts
Kaiser-N.W. (Medicare Plus I)	Total Approx. Medicare Enrollment - 60,000 Beneficiaries
Pacificare (Secure Horizons)	Minneapolis
Physicians Inter-Hospital Health Plan (The Good Health Package)	Group Health, Inc.
Total Approx. Medicare Enrollment - 15,000 Beneficiaries	HMO Minnesota
Long Beach, CA	Medcenters Health Plan
Family Health Plan	Physicians Health Plan of Minnesota
Maxicare	Senior Health Plan
Pacificare (Secure Horizons)	SHARE
	Total Approx. Medicare Enrollment - 81,000 Beneficiaries

Although a probability sample of HMOs enrollees is used in the evaluation, other alternatives were considered before this decision were made. Among the alternatives were (1) sampling from the largest HMO, or that combination of two HMOs which accounted for 80% or more of the Medicare risk contract enrollment; (2) sampling from HMO enrollees according to a zip code stratification based on the S/HMO market penetration rates; (3) selecting HMO members age 75 or over rather than 65 or older; and (4) selecting HMO members from all HMOs, regardless of their date of enrollment.

The first option was considered because it gave the evaluation a greater likelihood of negotiating with the sample HMO for access to client specific billing/use history data. This option was ultimately not pursued because of uncertainty about our ability to negotiate entre to such data, and the expense of obtaining and/or organizing it into a uniform data set. The second option sought to control for ecological attributes potentially associated with the zip code residence of S/HMO enrollees (e.g., ethnicity, proximity to care, health care use patterns). This option was abandoned because of the small size and instability of S/HMO zip code enrollment levels at this time. Option three was proposed as a cost effective means of obtaining an enrollee sample with a proportionately higher risk of functional impairment then would be expected among a group of elderly aged 65 or over. This approach was not pursued because it reduced the generalizability of the HMO results -- an issue with high priority for the consumer choice survey. Option four would have allowed the evaluation to profile the functional health status and choice preferences of the total membership of HMOs within the market area. This option was not pursued because HMO risk contract enrollees were not seen as primary marketing targets for the S/HMOs as these individuals had already made a selection into a prepaid health plan. Moreover, disenrollment of this group is tracked through two other means by the evaluation: enumerating disenrollments, and conducting a satisfaction survey among a sample of disenrollees. Finally the varied interval since enrollment in these plans, was thought to seriously weaken the memory/recall regarding health plan choice decisions.

The decision adopted -- a probability sample of HMO enrollees proportionately selected from all eligible HMOs -- was made because it best enabled the evaluation to develop a S/HMO market area estimate of the functional status of new enrollees into risk contract HMOs. The evaluation's fiscal inability to track the HMO comparison group overtime further argued for a probability approach -- as the financial and political efficiencies of a purposeful sample of HMOs (as noted above) were not necessary.

Power Analysis for the HMO Comparison Sample. The power calculations described here for the HMO comparison group consider only the number of cases included in the health status and selection bias analyses (n=700 completed interviews per site). The consumer choice subsample is discussed in the following section.

- Between 100 and 150 HMO cases per site are expected to be severely or moderately impaired using the health status screening criteria discussed previously.

- Up to 600 cases per site are expected to be non-impaired functionally.

When pooled across sites these subgroups produce a combined sample of 300 to 450 impaired cases and 1800 non-impaired cases. Estimated conservatively, these sample sizes provide the ability to distinguish (at 90% power) between 7 and 9 percentage point differences between the pooled number of impaired S/HMO, or FFS high cost service users and HMO impaired enrollees (see Appendix A). Sensitivity is even higher among the non-impaired group -- being at about 3% percentage points at 90% power again using pooled cases. These levels of power are thought to be adequate for assessing important baseline differences in the functional health status or prior health care use characteristics of the HMO population. Group differences greater than the sensitivity ranges indicated here would truly suggest important bias selection differences.

Site-specific analysis reduces the effective sample sizes to about 100 cases per site for the impaired and about 600 non-impaired cases. As seen in Appendix A, the S/HMO and HMO comparison group impaired sample sizes are sufficient to distinguish reasonable variations. A sample size of 150, at 90% power, can detect a 9 point difference between S/HMO enrollees and similar persons in the HMO when the proportion of persons in the criterion subgroup (e.g., high service use history) accounts for 5% of the enrollees. A difference of 11 points can be detected when these subgroup proportions are 10% of the enrollment. Relaxing the power level stringency to 70% permits a narrowing of the point differences between groups to 7 and 9 points respectively. Among the non-impaired point difference sensitivity rises substantially, generally back to 5 to 7 point differences at 90% power. All these estimates are conservative in that they use binomial variables rather than the continuous measures actually available for the analysis. Of particular importance in these analyses is the non-impaired group comparison, because it is these individuals who produce the "insurance pool" for the S/HMO impaired enrollees. The design has its greatest statistical power in comparing non-impaired HMO members with similar S/HMO, and FFS cases.

Consumer Choice and Satisfaction Samples

Three populations are sampled in developing the consumer choice and satisfaction experimental and comparison groups.

- S/HMO enrollees (both impaired and non-impaired)
- FFS beneficiaries (both impaired and non-impaired)
- HMO enrollees (both impaired and non-impaired)

Each of these samples is a subsample drawn from the probability samples developed in the impairment casefinding phase of the evaluation discussed previously.

Consumer Choice Sample. The sample procedures and selection criteria for naming these subsamples are as follows:

- A stratified random sample of 170 members from each of the FFS and S/HMO impaired groups and all impaired HMO comparison group members will be selected in each site at the time of the casefinding telephone interview.
- A stratified random sample of 225 members from each of the FFS, S/HMO, and HMO non-impaired groups will also be selected at each site at the time of the casefinding telephone interview.
- To be eligible for inclusion in the proceeding sub-samples, non-impaired HMO and S/HMO members must have enrolled in their respective health plan between October 1, 1985 and March 1, 1986. Non-impaired FFS members are randomly selected without regard to this time interval constraint.
- Selection of impaired S/HMO and HMO cases will also give priority to the inclusion of cases enrolling in these health plans between October 1, 1985 and March 1, 1986. If there are not enough impaired cases enrolled during this period, the eligible time interval will be extended to June 30, 1986. The quota of cases will be randomly selected from among the enrollees during these eligible time periods. Among impaired FFS cases, there is no period constraint. Such cases are randomly selected.
- The selection of impaired and non-impaired FFS and HMO cases is facilitated by the use of a computer assisted telephone interview (CATI). Impairment criteria (discussed previously in the impaired sample section) are pre-programmed and automatically identify the impairment classification of the case during the case finding interview.
- Preliminary assignment of HMO comparison group members to the consumer choice sample will be made (based on date of HMO enrollment) prior to the casefinding screening interview. This will be done in blocks, or waves of 50 cases. Everyone within these blocks will thus receive a choice interview regardless of their impairment classification. These procedures will be repeated by sample blocks until the desired number of non-impaired cases is reached. Subsequent blocks will be selected only into the impaired group as appropriate.
- Similar consumer choice sample blocking procedures will be followed among the FFS group, although these groups will not need to be stratified by date of enrollment.

The sample generated by these procedures will reflect a self-weighted probability sample of impaired and non-impaired FFS beneficiaries, and a similar sample of HMO and S/HMO enrollees who have made health plans enrollment decisions no later than October 1, 1985. Unlike the FFS group, the HMO and S/HMO consumer choice samples do not generalize to their respective population.

The rationale underlying the time of enrollment stratification is the desire to focus the evaluation's limited resources on those individuals who have made recent health plan decisions. It is this group which has the best recall of their decision process, and which has likely been most subjected to S/HMO marketing efforts. Furthermore, it is from among persons making recent decisions -- as compared to people joining an HMO earlier that the S/HMOs must now attract enrollment.

The FFS population does not have the same time period constraint for two reasons. First, there is no practical way of assigning a date to their FFS "enrollment". Secondly, this group can also be interpreted to have made decisions since October 1, 1985, of not joining either a S/HMO or HMO. For that reason alone they are an important subgroup.

Two different sample sizes have been developed for the impaired and non-impaired subgroups. The number of impaired cases was selected based on the practical consideration of the distribution of impaired cases within the S/HMO enrollment and HMO comparison group. The site with the lowest enrollment (i.e., Minneapolis with approximately 170 such cases) was used to set the limit of cases for all other S/HMO sites and for the FFS group. The actual prevalence of impaired HMO enrollees, although not known, is expected to approach this sample size level. Approximately equal sample sizes across S/HMO, FFS, and HMO subgroups maximize the efficiency of the impaired sample within the evaluation's existing budget.

Among the non-impaired S/HMO, FFS, and HMO groups uniform sample sizes are also being used, again for reasons of efficiency. The number of cases in each group (n=200) however is slightly higher. This has been done because it improves the statistical power of the sample without any notable effect on cost.

Satisfaction Sample. The satisfaction survey sample consists of the surviving members in the S/HMO, FFS, and HMO consumer choice sample -- recontacted 12 months after their initial screening and consumer choice interview -- and two other purposefully selected groups. The coupling of the consumer choice and satisfaction samples minimizes the number of data collection contacts. It involves less than all impaired and non-impaired sample cases in the S/HMO and FFS groups (and even among the HMO

non-impaired), and cultivates relationships among persons receiving the consumer choice survey. We expect these respondents will see the logic and appropriateness of follow-up about their health plan satisfaction, after initially inquiring about the factors affecting their selection decision.

It is estimated that 25% of the impaired members of the consumer choice sample and 15% of the non-impaired members will be lost to attrition (i.e., death, institutionalization, relocation during this 12 month period) and that another 20% of these groups will refuse to cooperate with the satisfaction survey. In combination this produces impaired FFS and S/HMO samples of approximately 83 respondents each (and 55 HMO cases), per site; and about 130 non-impaired cases, each of FFS and S/HMO respondents per site.

One purposeful sample is all S/HMO members who change health plans (e.g., disenroll from the S/HMO) between June 1, 1986, and May 30, 1987. The number of these cases is expected to be about 5 to 10 percent of the S/HMO enrollment or between 400 and 800 cases.

The second purposeful sample is drawn from HMO members who disenroll between June 1, 1986 and May 30, 1987. This sample will be selected monthly with a maximum of 20 cases per site selected into the sample. This produces an expected community sample of 240 cases per site or 720 case total.

The satisfaction sample design reflects three important departures from the original RFP. First, it uses a stratified probability sample of S/HMO members -- stratified by date of enrollment -- rather than being representative of the whole membership. Secondly, it adds an HMO group. Third, it adds S/HMO and HMO disenrollee groups.

The current sample plan was adopted for several key reasons. Foremost is an assumption that health plan membership is largely self-selected and that most members at any one time are reasonably well satisfied. Hence there is likely to be little variation in satisfaction levels among plan members regardless of the plan they are in. Furthermore, the expected incidence of dissatisfaction at a point in time was believed to produce a very small number of cases -- if selected randomly from a population -- who might be queried about their reasons for dissatisfaction.

Power Analysis for the Choice and Satisfaction Samples. The selection of applicable power levels for the consumer choice and satisfaction samples is largely a policy, rather than a technical issue. How important is precision in the discrimination of choice decisions for impaired and non-impaired members of the S/HMO or

HMOs? The motivators of choice, such as awareness of the S/HMO benefits and other insurance coverage available can be expected to be among the more common influences on the decisions made. We believe that a difference of 10 points or less among enrollees and non-enrollees is not important from a policy standpoint, as these differences are tractable given changes in marketing, and premium price. The relatively "soft" data available for measuring choice and satisfaction further argues for the appropriateness of using a relatively large point difference to assess statistically significant differences among the S/HMO, FFS and HMO groups.

Because of these considerations, it is possible to conduct both a site specific and pooled cross-site analysis of choice and satisfaction using smaller sample sizes than those in other phases of the evaluation.

As seen in Appendix A, a sample size of between 150 and 200 cases per site, at 90% power, can detect a 9 point difference between two groups when the proportion of persons in an important criterion subgroup (e.g., previous or current high service users, those with supplemental insurance, or with extensive knowledge about health plan alternatives) accounts for 5% of one group. A difference of 11 points can be detected when these criterion group proportions are at 10%. Relaxation of the power level stringency to 70% under these conditions permits a point difference sensitivity of 7 to 9 points respectively.

DATA COLLECTION PLAN

The evaluation relies on both primary and secondary data collection. Copies of the data collection instruments are found in the Appendices.

PRIMARY DATA COLLECTION METHODOLOGIES

Primary data collection consists of seven planned tasks and one optional task: (1) telephone casefinding survey to construct a longitudinal FFS and HMO comparison group panel; (2) mail questionnaire (i.e., Health Status Form (HSF)) to track well FFS comparison group members; (3) baseline Comprehensive Assessment Form (CAF) in-home interview and periodic CAF tracking with frail FFS panel members; (4) consumer choice telephone interview with impaired and non-impaired S/HMO, FFS, and HMO comparison group members, (5) mail satisfaction survey to S/HMO, FFS, and HMO comparison group members; (6) out-of-pocket health care expenses and service use tracking with impaired FFS and S/HMO panels; (7) case study of the S/HMO case management, organizational form, and market environments; and (8) a tentatively planned telephone interview of the informal caregivers to impaired S/HMO and FFS comparison group members.

The data collection plan intends to achieve a high level of statistical power within budgetary constraints. The building block for data collection is the casefinding efforts to identify the severe/moderately impaired populations within fee-for-service and HMO comparison groups. All other samples (e.g., non-impaired fee-for-service and HMO groups) and persons receiving the choice and satisfaction surveys derive from this casefinding sample.

1. TELEPHONE CASE-FINDING SURVEY

The screening interviews have three purposes: (a) to identify functionally impaired fee-for-service beneficiaries who (once so identified) will receive personal in-home assessments and will constitute the impaired FFS comparison group panel, (b) to identify a non-impaired fee-for-service comparison group panel, and (c) to select subsets of persons in the FFS and HMO populations who will receive health choice interviews and satisfaction questionnaires.

The screening interviews will be conducted by Westat, Inc. and will be programmed into a computer assisted telephone format (CATI) resulting in an automatic classification of respondents during the course of the interview. (See Appendix B for a copy of the instrument.)

The casefinding plan being used parallels the screening procedures used in the 1982 National Long Term Care Survey (NLTC) supported by the Health Care Financing Administration and the Office of the Assistant Secretary for Planning and Evaluation (ASPE) (Macken, n.d.). It consists of three major components: developing a mailing and telephoning listing, conducting telephone screening survey (and/or mail questionnaire to those for whom phone number cannot be obtained), and conducting an in-home interview among those identified as impaired.

The following tables summarize the number of cases expected in each of the sites and subgroups, and the cooperation rate assumptions used in developing the sample listings. The screening interview is expected to take between 10 and 15 minutes to administer.

Table 3

SITE AND SUBGROUP SAMPLE SIZES
FOR THE HEALTH SCREENING INTERVIEWS

Community	Number of Names Drawn	Approx. Completion Rate	Estimated Mod/Sev	Total Estimated Complete Screens
Brooklyn				
o FFS	3408	.66	200	2277
Long Beach				
o FFS	3555	.77	200	2753
o HMO	1000	.70	100(a)	700
Minneapolis				
o FFS	2935	.74	190	2178
o HMO	1000	.70	100(a)	700
Portland				
o FFS	6760	.63	420	4297
o HMO	1000	.70	100(a)	700
TOTAL	19658	.69	1310	13605

(a) The actual proportion of moderate or severely impaired in each HMO is not known. Consequently, the number shown here is only a rough approximation. For this strata we have allocated resources for 700 completed interviews. We will accept whatever proportion of moderate and severe cases are identified within this limit of interviews.

(b) Completion rate varies by site due to a combination of factors: referrals, language problems, moved out of area, deceased, institutionalized, no phones, other unlocatable, other ineligible. Rates as shown do not include mail questionnaire completions.

Table 4

TELEPHONE FFS AND HMO SCREENING
INTERVIEWS COOPERATION RATE ESTIMATES (a)

	FFS	HMO
Initial Sample	16,658	3,000
Ineligible (deceased, moved, institutionalized) (9%)	1,499	270
Not Available by Telephone (13.4%)	2,232	402
Telephone Screens Attempted	14,426	2,598
Telephone Screens Completed	11,505	2,100
Mail Screens Attempted (30%)	2,232	402
Mail Screens Completed	670	120
Total Screens Completed	12,175	2,220
Severe/Moderate Cases	1,310	300

(a) The basis for these assumptions is discussed in depth in the original proposal, pages 3-97 thru 3-101.

The sample drawn for the casefinding survey receives a letter from the project several weeks before the telephone interview. This letter discusses the importance of the study, the importance of their participation, and the voluntary nature of participation, and requests information regarding changes in phone numbers, name and address corrections. All correspondence is mailed on HCFA letterhead. (See Appendix Q for a copy of the letter)

A press release and contacts with community agencies have also been made to help facilitate the visibility and credibility of the study. Among the agencies receiving these advance notices are the Social Security Administration District Offices, Medicare Directors at the HCFA Regional Offices, Area Agencies on Aging, and the Better Business Bureau.

In addition to this public relations advance work, the interview protocol itself has been designed to aid in high rates of cooperation. Most important in this regard is the attempt to locate proxy respondents for the sample subject. Proxy

respondents are used if the sample member is physically or mentally unable to competently participate in a telephone interview. Following are the criteria used to screen and select respondents during the telephone contact:

- Name, age, sex, date of birth verified against our records
- Correct address, phone number for respondent
- Individual is present and capable of conducting interview
- Individual is not present, but can be contacted for interview
- Proxy respondent is needed because sample person is physically, or mentally incapable; person has a hearing/speech problem; person cannot speak English; person is temporarily absent
- Proxy is familiar with respondent and is able to answer the screening questions

It is anticipated that up to 1/3 of the impaired sample members will have a proxy respondent assist in at least a portion of the interview. Overall, less than 10% of the respondents are expected to be proxies.

During the course of the interviewing, Westat staff will complete a name, address, telephone and proxy listing (if applicable) daily for all functionally impaired persons identified through case finding. These listings will be forwarded at least twice a week to the Berkeley Planning Associates (BPA) field staff located in each of the demonstration site communities. This is done because BPA staff are responsible for conducting in-home comprehensive assessments on these respondents. These assessments are planned to occur no later than two weeks following the telephone interview. The short interval between the screener and the in-home assessment is needed to help reduce attrition in the sample and to reduce the period during which changes in health status might occur.

Persons not responding to the initial mailing received a duplicate second mailing. Persons not responding to this, i.e. the unlocatable, are then sent a certified letter.

At the completion of the screening interview process, Westat will develop a data tape containing screening information on all impaired and non-impaired persons interviewed. This tape will be sent to Duke University which is responsible for project data base management. An additional copy of this data tape and all documentation on the sample selection and response rates, will be sent to the Institute for Health & Aging for archiving.

2. NON-IMPAIRED S/HMO AND FFS SAMPLE HEALTH STATUS INFORMATION TRACKING

Each S/HMO demonstration project is required to collect Health Status Information on all its enrollees. The S/HMOs collect this information using a mail self-completion Health Status Form (HSF) at enrollment and annually thereafter. We have adapted the S/HMOs HSF for use as the telephone casefinding interview schedule (see Appendix D). This form will also be administered as a self-completion questionnaire, which we will distribute to the non-impaired fee-for-service comparison group at six month intervals during the 24 months following their baseline interview. The non-impaired S/HMO panel will continue to be annually reassessed by the S/HMO staff using the sites' HSF. During the semi-annual period, IHA staff will be responsible for contacting S/HMO non-impaired sample members regarding their functional health status. This will be done by mail using an abbreviated form of the HSF (see Appendix D).

Periodic HSF readministration to non-impaired S/HMO and FFS beneficiaries maintains a record of the sample beneficiaries' functional health status. Panel members with a change in status from non-impaired to impaired will be followed-up by Comprehensive Assessment tracking procedures (see below).[4]

FFS Non-Impaired Sample. Table 5 lists the planned sample sizes (n=10,500) of the non-impaired FFS comparison panel who will be tracked overtime. It includes all non-impaired FFS sample cases selected for the original casefinding interview. This group is somewhat larger than the S/HMO non-impaired enrollment as of June 1, 1986.

Table 5

NUMBER OF NON-IMPAIRED FFS AND S/HMO HEALTH STATUS TRACKING CASES

Site	FFS Group Number Expected	S/HMO Group Number Expected
Brooklyn	2077	1334
Long Beach	2553	1431
Minneapolis	1988	994
Portland	3877	3300
	10495	7059

The original evaluation plan specified an equal sample size (n=300) of non-impaired persons at each site. This sample is adequate for comparing service use patterns between the FFS comparison group and S/HMO members, but it is not adequate for tracking transitions such as the last year of life in health status.

A larger sample size permits the analysis of these broader issues, without increasing of the evaluation budget. We propose a dual tracking strategy that emphasizes semi-annual mail questionnaire tracking of the total non-impaired FFS sample (n=10495). Second, as a back-up strategy we will maintain the original plan and more intensively track a subsample of non-impaired FFS cases (n=300) per site -- employing telephone contacts (in addition to the mail questionnaire) to assure cooperation.

FFS dual tracking plan will proceed as follows:

- During the first six-month follow-up period, all non-impaired cases will receive a health status monitoring form (HSF) (including up to two reminder letters). The purpose of this mailing is to obtain health status information, while also assessing the actual response rate from a mail questionnaire.

- The S/HMO sites report a 95% cooperation rate among their enrollees using mail questionnaire forms. If a 80% or higher cooperation rate is achieved in the FFS comparison group, total non-impaired group mail tracking will be continued into the next six month follow-up period with all cases (whether responding and non-responding in the first period) receiving a second semi-annual HSF tracking questionnaire.

- The FFS cooperation rate (i.e., 80% or more) at the second follow-up period will determine if the total group is continued to the third six-month tracking period.

- Should a cooperation rate of 80% fail to be achieved at the first, second, or third semi-annual follow-up the study will limit its data collection efforts to the back-up strategy, and track only a subsample (n=300 at each site) for all remaining tracking periods.

- The individuals in the subsample (n=300 per site) will be pre-selected at the outset of the health status tracking. Individuals in this subsample will receive mail questionnaires and telephone interviews as needed through every follow-up period.

Berkeley Planning Associates (BPA) and the Institute for Health & Aging (IHA) will share responsibility for the HSF tracking. IHA will be responsible for distributing and coding the mail questionnaires and any mail follow-ups. BPA field staff will be responsible for any needed telephone contacts with non-respondents in the non-impaired subsample.

All HSF mail questionnaires and telephone interviews will be returned to the IHA for coding and records management. IHA will refer any cases reporting a change in health status to the BPA on-site field teams for comprehensive assessments. After each tracking period IHA will send a data tape on the health status of respondents to Duke University for incorporation into the project master data files.

S/HMO Non-Impaired Sample. This sample will consist of about 7060 persons, inclusive of the total non-impaired enrollees in each S/HMO as of June 1, 1986. Table 5 above shows the approximate distribution of these cases by S/HMO site.

Within the non-impaired S/HMO sample there are two data collection plans:

- All S/HMO members selected into the non-impaired sample will receive mail back health status monitoring forms annually from the S/HMO on or near the anniversary date of their enrollment. At least two such reassessments will be conducted during the course of the evaluation period. These instruments are distributed by the S/HMO case management staff.

- S/HMO enrollees not responding to the annual mailout health status monitoring form will be contacted by the S/HMO case manager to complete this information by telephone.

- The S/HMOs will update the health status classification for each panel member as needed at anytime between these anniversary date mailings, based on changes of functional health status observed by physicians, or client reported changes in health status. The S/HMOs maintain this information on the S/HMO enrollee case records.

- Augmenting the annual HSF, IHA will semi-annually mail HSFs to S/HMO sample enrollees. Persons not responding to these mailings will be contacted by BPA nurse assessors to complete this information by telephone.

The evaluation team will work with the S/HMO staff to periodically update a master file on the health status of each S/HMO sample case. This file will include the HSF and any updates through the tracking period. The intention is that the file will provide monthly health status for each enrollee. These records will be compiled by the S/HMO staff as part of their operating management information systems, or on hard copy questionnaires. Where possible computer tapes will be provided. Where not available (e.g., Minneapolis) copies of the HSFs will be provided and keypunched by IHA staff. All data sets will be forwarded to Duke University for incorporation into the evaluation's integrated data base.

3. COMPREHENSIVE ASSESSMENT AND PERIODIC S/HMO AND FFS IMPAIRED GROUP TRACKING

The Comprehensive Assessment Form (CAF) is the primary instrument for gathering health, functional status, and informal support data from the functionally impaired S/HMO and FFS groups at baseline and subsequent tracking intervals. This instrument also includes information on service utilization and costs not available on Medicare data tapes such as use and S/HMO expenditures for chronic care benefits. The CAF form was originally developed by the S/HMO sites and Brandeis University.

We have developed a revised CAF instrument (see Appendix F). It varies from the S/HMO CAF as follows:

- Through omitting forty questions, it reduces redundancy with the HSF screening instrument, but retains all the basic domains used in the original instrument. Questions eliminated include basic demographics (covered in the HSF), and service utilization (which are instead incorporated into the out-of-pocket expenditure instrument discussed later).

- It added two questions -- one linking specific health problems to ADL and IADL measures, and the other a standardized depression scale based on symptomology.

- Revised four questions and the physical environment checklist. These revisions were done to make the CAF questions common with the nursing home certification questions across all sites; to make IADL and ADL questions consistent with those on our HSF; and to operationally define the items on the environment checklist. The specific questions dropped or changed are listed in Appendix O.

S/HMO Impaired Group. The S/HMO sites will continue to use their own CAFs both at baseline and on any readministration. They have elected not to add the new questions developed for the comparison group (see Appendix P for these questions).

- S/HMO members receive a comprehensive assessment (CAF) under a variety of circumstances; most commonly, to date, at the time of enrollment into the health plan. Each site has developed criteria for reviewing an HSF that identifies a person as having a functional impairment, or as potentially in need of chronic care services. In general CAF trigger criteria include:

- Person is bed bound or reports needed assistance in one or more ADL items (two or more ADL in Portland)
- Needs assistance in two or more IADL items
- Needs assistance in mobility
- Problems with bladder and bowel control
- Use of special equipment
- Hospital or nursing home admission in past year
- Receiving selected social and health long term care services
- Using five or more medications

The bed bound and/or ADL limitations automatically trigger a CAF in all S/HMO sites. The remaining items are used by one or more sites to trigger at least a moderate impairment classification. These latter enrollees are often contacted by telephone to clarify the problem and the individual's condition.

When considered appropriate, the S/HMO case manager conducts an in-home assessment using the CAF. According to S/HMO protocols, a CAF is completed on all members as a preliminary step in developing a care plan. However, not everyone who is CAF'd necessarily receives a care plan or chronic care services.

S/HMO members receiving chronic care benefits are reCAF'd every six months for as long as they receive these benefits. Persons initially CAF'd, but not receiving chronic care benefits are not routinely reCAF'd by the S/HMO sites. In most instances these individuals are usually monitored by telephone on a monthly basis by a case manager.

A second group of S/HMO members receive CAFs because of changes in their health status after enrollment. These individuals are identified during annual reHSFs, by referral from a S/HMO physician, from hospital discharge planning, self-referral or through other means. Once an individual has been referred to the case manager, the process becomes the same as with cases at enrollment -- comprehensive assessments are conducted as part of chronic care planning. If persons receive chronic care benefits, they are routinely reCAF'd after six

months. If they are not receiving these benefits, they usually are not reCAF'd.

For purposes of the evaluation the S/HMOs directors have agreed to modify these routine procedures to generate uniform data among the S/HMO impaired group sample by following these procedures:

- Any S/HMO sample member who at time of enrollment or any later time becomes severely impaired according to the evaluation's criteria of severity (i.e., bed bound or with one or more ADL limitations) should receive a baseline CAF. These CAFs will be conducted by S/HMO case management staff.

- Anyone, who at baseline or subsequently, meets the evaluation's moderate impairment classifications should also be CAF'd. These CAFs will be conducted by BPA nurse assessors.

- Automatic reCAFs at six month intervals will be conducted with any S/HMO sample member classified as nursing home certifiable (NHC) -- using a common cross-site NHC criteria for this classification. This brings the S/HMO case tracking procedures into alignment with those used among the comparison group. These non-NHC reCAFs will be billed to the evaluation subject to the allocation of needed supplemental funds by HCFA.

- All moderately impaired S/HMO sample member (using the evaluation's criteria) will be monitored quarterly by mail questionnaire (see Appendix D for a copy of the monitoring form). This will be distributed and coded by IHA staff.

- If the beneficiary changes health status (using the evaluation's criteria) -- moving from moderate to severe, or severe to NHC -- then a CAF is conducted. All CAFs for severe cases will be conducted by S/HMO managers. The others will be administered by BPA.

See Appendix E for the criteria used to classify S/HMO members into impairment groupings.

FFS Impaired Group. The comprehensive assessment process used with the FFS comparison group will approximate the process followed by the S/HMO sites. To collect CAF data from the functionally impaired fee-for-service sample we have recruited nurses and medical social workers in each S/HMO market area. These nurses and social workers will administer the CAF at baseline and at reassessment intervals, and be responsible for all other direct personal contact with respondents. These

individuals will work under the supervision of Berkeley Planning Associates (BPA) staff. The procedures by which nurses and medical social workers will be recruited, the procedures for contacting respondents, and techniques for tracking "lost" cases are discussed in the original proposal pages 3-128 thru 3-134.

The steps to be used in the comparison group assessments are as follows:

- All FFS persons initially identified as severely/moderately impaired during the casefinding telephone interview will receive an in-home assessment. This process approximates the enrollment screening procedures used by S/HMOs. Our initial assessment will establish what we hope will be an on-going 2 year relationship with the respondent, while providing the opportunity to verify and elaborate information obtained in the screening interview. The home visit also includes a brief environmental assessment, identifies the formal and informal caregiving resources being used by the individual, and introduces the chronic care expenditure and utilization diary which will be used to monitor out-of-pocket expenditures. We discuss the use of this diary in a subsequent section.

- After this initial visit, persons meeting NHC criteria will receive monthly telephone monitoring calls from our assessors. These calls will monitor changes in health status and location; and collect data on out-of-pocket use and expenditures occurring during the month.

- Impaired respondents who are not NHC will have their health status and out-of-pocket use and expenditures tracked quarterly by mail (see Appendix D for the tracking instrument). These periodic contacts parallel the types of contact undertaken by the S/HMOs.

- Baseline nursing home certifiable persons (NHC), will be automatically reCAFed through in-home CAF interviews every six months.

- All non-NHC panel members whether impaired or non-impaired who experience changes in their health status during the quarter, will also receive an in-home CAF.

Table 6 shows the number of impaired cases expected from the initial casefinding screening interviews, the approximate number of cases receiving monthly monitoring phone calls, and the number of quarterly mail monitoring and telephone follow-ups to non-responders. The incidence of routine semi-annual reCAFs and episodic reCAFs also has been estimated. We anticipate that

about one third of the sample will fall into one or the other of these subgroups. Attrition from the sample is expected to be as high as 50% over the 24 month tracking period. This attrition, however, is expected to be off-set by the incidence of the non-impaired sample who become impaired. All such persons will be CAF'd as appropriate to the procedures outlined above. Also shown is the estimated number of S/HMO enrollee CAFs and monitoring to be conducted.

Each initial CAF is expected to take between 1 and 1-1/2 hours (exclusive of travel time). The monthly phone monitoring will take three to five minutes per case.

Table 6

HEALTH STATUS AND UTILIZATION AND EXPENDITURES ASSESSMENTS, REASSESSMENTS AND PERIODIC MONITORING

	FFS Cases Monitored	S/HMO Cases
Initial Sample CAF'd	1,343	715
Non-Frail Who Need CAFing	650(a)	650
Monthly Monitoring Phone Call (x23 after first quarter - reduce as appropriate)	443	
Monitor By Mail Quarterly (x 8)	567	1543
Telephone Follow-Up on Non-Response	430	800
Semi Annual ReCAF (x 4)	430 (33%)	
Episodic ReCAF (x 4)	430 (33%)	

(a) Reflects original non-impaired group members who become frail over course of the 24 months of case tracking and require an initial comprehensive assessment to further verify the HSF classification. Staffing workload for these CAFs is included within the episodic reCAF category.

During the 24 month CAF and reCAF period, a data base management system will be maintained by BPA. BPA will track completion of assessments, reassessment dates, and the status of study participants (i.e., moved out of area, follow-up information needed, HSF response pending, etc.). Nurse assessors/social workers will perform field edits on the assessments and forward these data to BPA within one week of the date the questionnaire was administered. At six month intervals, BPA will forward edited, clean data sets to Duke University for incorporation into the study's master file.

4. CONSUMER CHOICE AND SATISFACTION

The consumer choice and satisfaction analyses are designed to produce results for each site, as well as permitting cross-site comparisons, among six subgroups: the impaired S/HMO enrollees, impaired FFS beneficiaries, impaired HMO enrollees; and the non-impaired S/HMO, HMO, and FFS beneficiaries.

The consumer choice survey will be conducted by telephone. This is a departure from the original evaluation design which requested a mail questionnaire. A telephone interview has been adopted to be conducted concurrently with the casefinding interviews because it assures a much higher rate of cooperation than could be expected using a mail questionnaire. Secondly, the nature of the questions being explored, and the inherent complexity of the instrument work more effectively as an interview rather than a self-completion instrument.

The satisfaction survey continues to be conducted as a self-completion mail questionnaire. This decision was made (1) so as not to incur the additional non-budgeted cost of conducting a telephone interview; and (2) because of an expectation of response effects among sample subjects. Previous experience with similar health care satisfaction surveys (Ware, 1986) has found that satisfaction ratings are higher when these data are collected by interview than by self-completion instruments. This difference is said to result from the propensity of respondents to be less candid in their negative judgements in an interview format.

The satisfaction survey departs from the original design in two ways. First, it will only be conducted once -- twelve months after selection into the sample. Multiple follow-up surveys of this type are judged to have high attrition rates and even more importantly, are believed to burden study panels -- perhaps jeopardizing their continuation in other aspects of the evaluation.

Second, the resources that would have otherwise been used in a second satisfaction survey were thought to be more productively used in assessing satisfaction among S/HMO and HMO disenrollees. Consequently, these latter groups have been added to the design.

- FFS and HMO Comparison Group Choice Sample. The comparison group samples are selected from the general case finding interview which classifies beneficiaries into functionally impaired and non-impaired groupings. During the case finding interview, conducted by Westat, selected respondents in the FFS and HMO sample will be given a health plan choice questionnaire (see Appendix B) at the time of the health screening interview.

The consumer choice survey instrument builds upon the instrument used by Mathematica Policy Research, Inc. in studying consumer choice for the Medicare HMO demonstration evaluation. It includes items about the current health plans and insurance coverage, where the individual heard about their current plan, why they selected their current plan, and whether they expect to need long term care benefits in the near future.

Table 7 shows the comparison consumer choice sample allocation for each of the study communities. The cooperation rates for these interviews will be very high (approximately 88%) as they are conducted in conjunction with the health screening case finding interview.

Table 7

HEALTH PLAN CONSUMER CHOICE FFS, AND HMO
INTERVIEW SAMPLE ALLOCATION

Study Community	Expected Number Mod/Sev Impaired Cases	Desired Number Mod/Sev Impaired Interviews	Desired Number Non-Impaired Interviews	Total Desired Choice Interviews
Brooklyn				
o FFS	200	150	200	350
Long Beach				
o FFS	200	150	200	350
o HMO	100	100	200	300
Minneapolis				
o FFS	190	150	200	350
o HMO	100	100	200	300
Portland				
o FFS	420	150	200	350
o HMO	100	100	200	300
TOTAL	1310	900	1400	2300

S/HMO Health Plan Choice Sample. The study will also interview a sample of impaired and non-impaired S/HMO enrollees regarding the reasons underlying their decision to join the S/HMO. Table 8 summarizes the expected number of cases from each S/HMO site. A high cooperation rate (90%) is assumed for S/HMO members.

Table 8

S/HMO CONSUMER CHOICE SAMPLE

Sites	Estimated Number Impaired Cases	Desired Number Impaired Interviews	Estimated Number Non-Impaired Cases	Desired Number Non-Impaired Interviews	Total Desired Choice Interviews
Brooklyn	170	150	225	200	350
Long Beach	170	150	225	200	350
Minneapolis	170	150	225	200	350
Portland	170	150	225	200	350
TOTAL	680	600	900	800	1400

The S/HMO consumer choice sample will be contacted in late-June 1986 and notified of their selection into this sample. Beginning about mid-July, 1986, Westat, Inc. will begin telephone interviews with this group. Each S/HMO site will be given the option of notifying their members about this survey, jointly notifying them as we do, or of having us notify them directly.

The survey instrument for the S/HMO sample is similar to the instrument used for the comparison groups. Its differences are that it adds questions expressly focused on the S/HMO (See Appendix K).

At the request of the S/HMO site directors, an effort will be made to subdivide the choice sample into two groups, both a probability sample of their S/HMO members, and an oversample of enrollees who have switched into the S/HMO for another HMO.

Satisfaction Survey. Three samples will receive the satisfaction questionnaire. These include: (1) those S/HMO, FFS, and HMO members (or their proxies) who received the consumer choice survey in the 1986 telephone interview. Each of these samples will receive a self-completion mail questionnaire. These will be distributed in June 1987. This questionnaire can be found in Appendix L. (2) S/HMO disenrollees since the outset of the S/HMO program through June 30, 1987; and (3) a sample of HMO members who disenroll from selected TEFRA risk HMOs in three of the four S/HMO market areas between June 1, 1986 through June 30,

1987. Each of these disenrollees will be identified monthly. A probability sample of HMO cases will be selected monthly. Each individual will receive a satisfaction questionniare within three to six months after their disenrollment.

- The IHA is responsible for conducting mailings. Non-responses to those questionnaires will be followed-up, with up to two further mail contacts. There will be no telephone interviews. Coding, file management, and case tracking procedures relating to these instruments will also be the responsibility of IHA.

Ideally the satisfaction questionnaires will be completed by the elderly beneficiary themselves. While a high proportion of respondents, including the frail, will be able to do so, it is estimated that approximately 20% of the sample may need some assistance. For these cases, instructions will be written which ask the proxy respondents or other informal caregiver to not complete these questions. Rather, they will be instructed to read the questionnaires to the beneficiary and record <u>their</u> responses.

While this procedure does not guarantee total compliance among respondents, previous experience using this method of administration with the elderly has found that most respondents were able to obtain this type of assistance without problems (Ware, 1986).

The satisfaction survey instrument was designed using items primarily from the HMO consumer satisfaction studies conducted by John Ware, at Rand Corporation. This survey measures a number of dimensions of satisfaction including: access, quality, cost, location, and other factors. The S/HMO enrollees will also receive the consumer satisfaction survey with some additional items appropriate to the S/HMO (See Appendix M).

5. <u>INFORMAL CAREGIVING SURVEY</u>

If implemented, the informal caregiver survey will be conducted by the study's on-site nurse assessors supervised by BPA. Two informal caregiver study options currently being considered: (1) interviewing primary caregivers of both S/HMO and FFS impaired sample members' (2) interviewing S/HMO member caregivers only.

This survey augments the examination of the longitudinal behavior and coping of primary caregivers of both frail S/HMO and FFS comparison group study panel members. (See Appendix N for a draft instrument that requires revision and pilot testing before it is finalized.) This data collection complements data on

instrumental caregiving activities collected from the Comprehensive Assessment Form. The Informal Caregiving Survey will be conducted either in person or via a telephone interview, with the person identified as the beneficiary's primary caregiver. The caregiver individuals are identified from information gathered by the Comprehensive Assessment Form interview. This interview, as described previously, is routinely conducted with all impaired panel members.

6. SERVICE UTILIZATION AND EXPENDITURES

We will collect service use and expenditures data from two groups: all persons enrolled in the S/HMO as of July 1, 1986, and all members of Westat's FFS casefinding sample frame. These data will document the service use histories of the evaluation's experimental group - after the date of the enrollment in the S/HMO - for a 24 month period. Data collected from the FFS group will cover this same period. In addition to these "post-enrollment" data, another phase of the study looks at biased selection using Medicare bill files from January 1983 to January 1986. For this analysis prior use histories will be compiled for S/HMO, FFS and HMO sample frame members. These data will come from Medicare's MEDARS system, unless timelags in processing force us to obtain Part B data directly from the carrier. Timelags are not anticipated in Part A data.

All chronic care service utilization and expenditures for the frail S/HMO and comparison groups and selected other non-Medicare services will be studied. Hospital and physician utilization and expenditures are obtained from Medicare claims (see the discussion on Secondary Data Collection). Out-of-Pocket expenditures are obtained from periodic reports by frail S/HMO and comparison group study participants. These data will be collected as part of the information gathered with the comprehensive assessments and the impaired group monitoring. In this section we discuss only the primary data collection efforts.

Data collection consists of a respondent maintained diary of service use activity. This diary uses a calendar as a memory stimulous, and a record keeping ledger summarizing use behavior and expenditures (see Appendix I for a copy of this calendar). These materials are personally distributed by BPA staff and explained to the impaired sample members and/or their caregivers at the time of their first comprehensive assessment. For S/HMO enrollees who have previously been CAF'd, BPA staff will contact these sample members to introduce them to these forms and their purposes in the evaluation. Diary keeping compliance is monitored through three means. Among the FFS groups:

- Sample members who are severely impaired and who are nursing home certifiable (NHC) will receive monthly telephone monitoring calls and semi-annual personal visits.

- Moderately impaired persons and the non-NHC severely impaired will receive quarterly mail questionnaires asking them to summarize this service use activity during the previous 3 months.

- Persons who do not return these questionniares, or whose answers are incomplete or at variance with previous reporting periods will receive a telephone call to clarify and complete the form.

- Persons in the FFS sample who experience an adverse change in health status will also receive a personal visit and are given a CAF. During such visits the service case tracking materials are also reviewed.

(See Appendix H for the interview form.)

Among the S/HMO members who are moderate/severely impaired, tracking will occur:

- The severely impaired are routinely reviewed and evaluated by the S/HMO case managers every six months. Service use in conjunction with the care plan is routinely monitored on the patient's case record. A service does not have to be covered or paid for by the S/HMO to be included in this care plan. The case managers will use a special questionnaire (see Appendix H) that is a supplement to the CAF to collect chronic care utilization and expenditure data during the reCAFs and monthly monitoring.

- Those moderately impaired individuals and other impaired S/HMO members not receiving S/HMO benefits will receive quarterly mail questionnaires from IHA (see Appendix H). These instruments will serve as diaries for recording service use and expenditures. Those persons who do not return the mail questionnaires or whose answers are incomplete will receive a follow-up telephone call from BPA nurse assessors to collect the data by phone.

- Those individuals who are initially given a CAF by BPA nurses will have the calendars and the instructions given by the BPA assessors. Those who receive CAFs from S/HMO managers will also be visited by BPA nurse assessors and given instructions in the use of these materials.

IHA staff will be responsible for distributing the self-completion questionnaires, and for tabulating all questionnaires.

These primary data collection procedures are patterned after methods developed by the 1980 National Medical Care Utilization and Expenditures Survey (NMCUES, 1983). The essential element of these procedures is to have each participant in the study keep monthly copies of all bills and payments made for their health, long term care and social services expenditures. As an aid to this process the NMCUES project (NCHS, 1984), distributed calendars as a memory aid and a convenient way to maintain information. These calendars, with spaces for noting health care were found to serve as a constant reminder to the respondent of the NMCUES study and in so doing encouraged information to be recorded as an aid to future reporting. A pocket attached to the calendar provided a convenient place to store medical bills or statements. NMCUES, moreover, used a mixed mode data collection of both personal and telephone interviews to periodically record both use and expenditures across a broad range of expenditures.

Numerous studies have used variations of these methods with high response rates. Verbrugge (1978, 1980) describes 19 studies successfully conducted between 1938 and 1978. Since that time, other studies have been completed including work by Yaffe & Shapiro, 1979; Verbrugge & Depner, 1979; Marquis, 1979; Marcus, 1979; as well as NMCES in 1977 and NMCUES in 1980.

The 1980 NMCUES and a soon to be implemented National Medical Care Utilization and Expenditure Survey (NMES) used household survey data and administrative records as the two major sources for data. We will use the same approach. We have used a draft instrument from the NMES as a model for our instruments.

The NMCUES design, with its mixed data collection modes of personal interviews at initiation and telephone interviews every 2-3 months over a period of a year, produced a response rate of 89%. A replication of these general methods and the use of a much shortened version of service use diary is expected to yield similar cooperation among our samples.

Our procedures differ from NMCUES in two important respects. First, we have limited attention to chronic care and selected non-medicare reimbursed services. These greatly shortens the list of services to monitor, and generally limits us to services that will be received on a regular basis over extended time periods. Such a narrowing of focus minimizes the complexity of the memory and record keeping task by the respondent (or their caregivers), and minimizes the likelihood of service use underreporting. For the S/HMO sample, we will track utilization

and expenditures only when a service or item was not fully paid for by the S/HMO. The S/HMO's have records on all services that were fully paid by the S/HMO. This limits the data collection to those uses and out-of-pocket items that would not otherwise be recorded by the S/HMO.

While the data collected from the telephone is expected to be less reliable than from personal interview (Yaffe & Shapiro, 1979), we will be able to verify the telephone data in subsequent personal interviews. The respondent will be asked to provide the bills, receipts and other materials at the subsequent personal interview that had been reported on by telephone.

The S/HMO data collection is expected to require less extensive effort since each site collects utilization data on all those services it offers. Only those services not offered by the S/HMOs benefit package will have to be tracked. We estimate that use/expenditure data will involve 10 minutes in the monthly telephone monitoring calls for each frail member per month and 15 minutes in the CAF personal interviews every six months.

In our protocol, the appearance of a "new" chronic care service on the respondent's record, or the absence of a previously reported chronic care service will trigger an inquiry to verify the initiation and termination dates of these services.

A second means by which our design differs from NMCUES is an emphasis on the compilation of utilization information. Expenditures will be imputed based on use when necessary. From these data, we will measure beneficiaries' total charges, non-reimbursed total charges, and service use.

The questionnaire has been designed to be as simple as possible. Four categories of data are included: services, prescription medications, equipment and other devices, and long term care in the institutional settings. Four basic questions are asked about these services and items: the number of times (and amount) of services or items were used, the provider, the total charges for these services or items and the total amount paid by the individual or family out-of-pocket.

Figure 6 lists the services being tracked or monitored. Informal caregivers, if present, will be asked to participate in this data collection process by assisting the study participants to keep these records.

Figure 6

CHRONIC CARE UTILIZATION AND EXPENDITURES MONITORING CATEGORIES

HOME HEALTH CARE SERVICES

Visiting Nurse
Physical Therapist
Social Worker
Speech Therapist
Other Services
Occupational Therapist
Respiratory Therapist
Home Health Aide
Speech Pathologist

OTHER COMMUNITY SERVICES

Adult Day Health Care Center
Social Day Care Center
Homemaker, Housekeeper, or Chore Service
Other Services
Home Delivered Meals
Electronic Monitoring (Lifeline)

DENTAL SERVICES

Dentist
Dental hygienist
Orthodontist
other services
Oral surgeon
Periodontist

TRANSPORTATION SERVICES

Ambulance
Transportation to health services (including taxi, minibus, escort services, and taxi vouchers)

EQUIPMENT AND SUPPLIES

Eyeglass or Contact Lenses
Crutches, Wheelchair, Walker, Corrective Shoes, or other Orthopedic Device
Hearing Aid
Diabetic Equipment or Supplies
Medical Alert Device or Electronic Monitoring Device
Other Device or Equipment
Respiratory devices
Prosthesis (artificial arm, leg or breast)
(Seeing-Eye or Hearing-Ear Dog)
Modifications to your home (ramps, elevator, hand rails, raised toilet seat, etc.)

PRESCRIPTION DRUGS AND MEDICATIONS

NURSING HOMES AND BOARD AND CARE HOMES

Skilled Nursing Care (in a hospital or nursing home)
Intermediate Care (in a hospital or nursing home)
Board and Care (including residential care, domiciliary care, family home, etc.)

Acute Hospital Length of Stay
Acute Hospital Expenditures
Skilled Nursing Facility Admission
Skilled Nursing Length Stay
Skilled Nursing Expenditures
- Diagnosis Related Group (primary diagnosis, secondary diagnosis, procedures, charges)

o For physician charges under Part B, we do not need to obtain data on persons other than the FFS comparison group (N = 13,400) selected by Westat. Part B changes are relatively more common and are, therefore, less sensitive indicators of health status differences between FFS (residual and HMO enrollees in the period. Data collected include:

Physician Charges Under Medicare Part B
Home Health Admissions Part A and Part B
Home Health Service Length Part A and Part B
Total Number of Home Visits Part A and Part B
Home Health Expenditures Part A and Part B

Three data tapes will be used during the evaluation. The first tape will cover 1/83 to 1/85 -- the two years prior to study admission (for both enrollees and non-enrollees). This tape will be available in approximately December 1986. The second tape will cover 1985 and 1986, the first 12 months of study participation. This tape will be available about January 1988. Six months lag time has been allowed to enable claims to accumulate in the Medicare billing system. A third data tape will be compiled by January 1989 covering the full 24 months of the evaluation period.

S/HMO Utilization and Expenditure Client Files

Computerized claims files have been developed by each of the S/HMO demonstration programs. (The data elements available at each site are described in detail in the data Dictionary compiled by Brandeis University.) The S/HMO files contain information on the use of ambulatory care, hospitals, all chronic care benefits, and any vendor changes. These use records indicate frequency and duration of use as well as copayments, and deductibles paid by the beneficiary. The files are organized by individual members and can generate member specific records. Each of these systems varies in its current operational status and in its integration across records systems. Both the Portland and Minneapolis sites for example have had to integrate the chronic care benefit package system with the hospital and ambulatory systems of their parent HMO. Long Beach and Brooklyn, on the other hand have completely integrated systems, but these were custom developed. Significant problems posed by these record systems are that only

one has three have Health Status Forms (HSF) on their systems and only one has Comprehensive Assessment Form (CAF) data integrated with the claims records.

For purposes of the evaluation sample development it will be necessary to manually review HSF data in Portland and Minneapolis (and possibly Brooklyn) to classify enrollees into impaired and non-impaired groups. By December 1987, we anticipate that all S/HMO sites will have the ability to generate the then computerized files on their enrollees service use and health status.

Claims File Matching Across the Primary and Secondary Data Sets

After creating each of the above described data sets, the next step is to construct an integrated file on health care utilization and expenditures for each individual in the evaluation study. For S/HMO non-impaired enrollees this will involve only the S/HMO use and billing records. S/HMO impaired enrollees records will include this data set and add the primary data collected on non-plan expenditures (from service use interviews and questionnaires discussed previously).

Among the FFS non-impaired comparison group sample Medicare Part A and B claims will be used to measure service use. Impaired FFS cases will combine Part A and B claims data with data on chronic care and other non-Medicare services tracked during the service use primary data collection. While the initial coding of the primary data will be done by the IHA, Duke University will match primary and secondary data records, and integrate the service use and expenditures records with health status information from the HSF and CAF.

THE S/HMO: AN EVOLVING ORGANIZATIONAL FORM CASE STUDIES

The case studies address three issues: (1) the market environment and S/HMOs' marketing effectiveness; (2) the effectiveness of different organizational, management, and financing strategies used by the S/HMOs; and (3) the effectiveness of the case management systems used by the S/HMOs.

MARKET ANALYSIS

The market analysis focuses on the S/HMO competition within each different marketplace and the effectiveness of the S/HMOs in meeting marketing targets. The marketing study will be conducted during in the spring of 1986. One publishable paper will be prepared from this marketing study; (a draft will be completed by September 1986 and the final paper by January 1986). This

These procedures will be initiated at the time of initial sample selection, and continue at monthly or quarterly intervals (depending on the impairment status) for the ensuing 24 months. For cases leaving the study because of death, change of residence, etc., every effort will be made to compile this information through the period of their participation in the study. In cases of death we will attempt to contact family members up to six months following the beneficiary's death to obtain information on services and expenditures incurred by the deceased or the family during the last weeks of life.

Contingency plans have been developed in case the response rate for the mail questionnaire is low or extensive items on returned questionnaires are missing. Those respondents who do not return the mail questionnaires will be sent a second questionnaire with a letter requesting a response. Those that do not respond within two weeks will be called by the BPA nurses to encourage them to respond. This regular contact will also be important to being able to keep track of any changes in location or health status which might be able to keep track of any changes in location or health status which might indicate the respondent has become more frail. If one-quarter or more of the items on a returned questionnaire are missing, the nurses will telephone the individual to attempt to complete the missing items.

Those respondents in the S/HMO will have data collected in the same manner.

The studies of utilization and expenditures have generally been conducted by telephone and in person and not by mail. We want to maintain a minimum of a 80% response rate for the mail questionnaires. We also will use a rule of thumb that if one-third or more of the items on the questionnaire are missing, the questionnaire will be considered a total nonresponse.

At the end of the first quarter after our procedures have been instituted, we will reassess the amount of effort required in terms of time, cost, the response rate, and the extent of missing data. At that time, if the costs appear to be greater than the quality and quantity of data achieved by this method, we will either have to institute quarterly telephone calls to the sample or abandon these data collection efforts for the sample entirely.

SECONDARY DATA COLLECTION

We will use two sources of secondary data for selection bias and expenditures and service use analyses:

- Medicare beneficiary Bill History Retrieval System (MADRS) data for Medicare Part A and Part B service utilization and charges, and

- The S/HMO management information systems.

These data sources will be used to produce complete and integrated health care utilization and expenditure records on all study sample subjects, and they will form the nucleus of the case specific record, into which the study's primary data will be merged. These same data sources will also be used to create a data file on all Medicare beneficiaries living within each of the S/HMO market areas. The study design will also include a separate analysis of Medicaid spenddown individuals.

Medicare Data System

Medicare Part A includes hospital, home health care, and skilled nursing home claims. Physician and home health care are among the billing claims paid under Medicaid Part B.

Part A and Part B claims data will be obtained for all S/HMO enrollees and FFS and HMO comparison group clients for at least two years prior to the date the client entered the S/HMO or entered the study as a comparison group participant. Data will continue to be collected for each S/HMO or FFS beneficiary an additional 24 months (the elapsed time may be closer to 30 months due to the lag time between service receipt and the claim on the billing tape) or until the beneficiary's death. Medicare data will also continue to be obtained on all S/HMO disenrollees for that portion of the study period during which they are disenrolled.

For the purposes of the study pre-enrollment biased selection the following Medicare data will be compiled:

- Acute Hospital Admissions for the total Medicare beneficiary population of the catchment areas. Since hospitalizations are relatively infrequent events, this is necessary to provide sufficient power to identify differences in the population remaining in the FFS section in the two areas, Long Beach and Minneapolis, when HMO enrollments may have biased the residual FFS group. These data include:

paper will compare the market areas and market effectiveness of the S/HMOs both within each site area and across the four sites.

This analysis is based on quantitative data from the secondary sources described below and qualitative data from site visit interviews to answer the following questions: (1) what are the enrollment patterns of each of the S/HMOs; (2) what are the Medicare enrollment patterns of competing HMOs, PPOs, and insurers in each area?: (3) what are the characteristics of the competing plans in each site in terms of the length of time in operation, sponsorship, benefits, premiums, and service delivery in comparison to the S/HMO?; (4) what marketing efforts have been made by the competition and by the S/HMOs and how do these relate to actual enrollment trends?; (5) how has the competition affected the enrollment patterns of the S/HMO?; (6) what are the other factors at each site such as physician and hospital bed supply that may have affected the S/HMOs' marketing effectiveness?; (7) has the reputation and the attitudes of the S/HMO or its participating providers affected the marketing efforts; and (8) considering all these factors, how effective has each S/HMO been in marketing its plan to the elderly?

Data to answer these questions will come from a variety of secondary sources and from interviews of key informants at each S/HMO site. In general, a reputational method will be used to select the most important individuals or representatives of organizations to interview in each area. A triangulation method will be used to compare recommendations for those to be interviewed and to select those individuals or representatives that received the most concensus for interviews and appear to have critical influence in the community or information about the marketplace. Specific data and the sources of data for each question are outlined below.

The enrollment patterns of the S/HMO will be examined as the primary outcome in the marketing analysis. The S/HMOs each had a target enrollment of 4000 individuals for the demonstration. Only one of the S/HMOs had reached this level by the end of the first year, while the enrollment at the other sites ranged from 1200-1600, well below the anticipated level. The enrollment trends will be charted on a monthly basis for each S/HMO and the S/HMOs will be compared with each other on this outcome. Data for this analysis will come from S/HMO records and quarterly reports.

The enrollment patterns of Medicare beneficiaries in each competing HMO in each area will be examined. These data will be graphically displayed for the same period as the S/HMO operation, starting from January 1985, as well as the period prior to 1985. While Elderplan does not have competing HMO risk contractors, the

other sites do have considerable competition from HMOs.

The HMO enrollment data will be collected from the HCFA's Group Health Plan Master file. Where possible, we will also gather enrollment data from PPOs and private insurers that are enrolling Medicare beneficiaries but are not contracting with the Medicare program. Such data from documents and reports supplemented with interviews with HMOs, PPOs, Blue Cross/Blue Shield, and commercial carrier representatives will also be used to chart enrollment information.

The structural characteristics of those plans competing for Medicare beneficiaries will be compared to the S/HMO. Structural characteristics include total enrollment, ownership, sponsorship, hospital and physician providers, plan benefits, along with copayments, and deductibles and premiums. This analysis will identify those factors that may have the greatest impact on S/HMO enrollment.

The marketing practices of both the S/HMO and its competitors are critical to the enrollment of S/HMOs. Self-reported data from the visit interviews of competing HMOs and the S/HMO staff will analyze decisions and activities regarding where to market, target groups, marketing pitches, resources invested, styles, and other issues. Self-reported data on the techniques that HMOs, insurers, and S/HMOs use will be analyzed including: mass mailings, newspaper, television and radio advertisements, group presentations at senior centers or senior housing; open houses; and endorsement by local councils and groups. We will also conduct a content analysis of available print ad and brochures from the S/HMOs and their competitors. To the extent possible, the techniques used by the S/HMO will be linked with enrollment patterns. One key question is what strategies for the S/HMO and the HMO representatives perceive were the most effective and least effective in marketing including getting leads, closing the marketing sales, and retaining enrollees. Another key issue is whether individual or group, or a combination strategy is perceived to be the most effective one for HMO and S/HMO enrollment of Medicare beneficiaries.

Data for this information on marketing activities and strategies will come from interviews with representatives of the S/HMO and the competing HMOs or insurance plans. (See Appendix N for specific interview guide for competing plan and S/HMO representatives). Selected interviews will focus on the HMO competition, including interviews with officials from the HMOs with the largest share of the elderly enrollee market. Other interviews will focus on the Medigap competition and include representatives of companies with major Medigap policies in the

area. Representatives from competitive medical plans or preferred provider organizations including the large multi-specialty group practices will also be included. Finally, a number of interviews will be conducted with representatives of each S/HMO including the executive director, the marketing director, the fiscal officer, the medical director, and the hospital director. These interviews with the S/HMO officials will focus on market competition and market effectiveness and strategies.

The issue of whether HMO and insurance marketing activities for Medicare beneficiaries negatively affected the S/HMO enrollment is a subjective area. Were those S/HMOs in highly competitive market environments less able to enroll Medicare beneficiaries than those in less competitive environments? The perceptions of the S/HMO officials, HMO and insurance competitors, and other key individuals on this issue will be obtained through selected interviews. A representative of the local medical community, major hospital competitors, major consumer groups, employer groups, and unions may be interviewed in each area where appropriate to obtain their perception of the effects of the S/HMO and HMO marketing strategies. Descriptive data along with evaluative judgements by the evaluators will be provided on the effect of the competition in influencing enrollment patterns of the S/HMO.

In addition to marketing strategies and competitive behavior, other factors appear to be important in influencing enrollment patterns in the S/HMOs. On our initial site visits, we found that the reputation of the medical and hospital providers used by at least two of the S/HMOs could be an important variable that negatively affected S/HMO enrollment as well as attitudes of participating physicians. These issues will be explored in the interviews to determine how important the factors are perceived to be by potential consumers, unions, employers, and other providers. Data on the following factors will also be collected: the supply of hospital beds, physicians and other health care professionals; hospital occupancy rates and percentage of revenues from Medicare and Medicaid; the willingness of physicians to accept Medicare assignment; the reputation of the health care providers that contract with the S/HMOs or provide services for the S/HMO; and the availability of long term care providers within the community such as nursing homes, home health care, and adult day health providers.

These factors may influence the willingness of providers to participate in the S/HMO and the willingness of Medicare beneficiaries to enroll in the S/HMO. While no cause and effect relationships can be determined by this investigation, an association of these selected factors with enrollment rates,

provider participation, and provider attitudes will be described based on an analysis of the quantitative data from each site and interviews with the key individuals described above.

The final issue is how effective each S/HMO has been in marketing its plan to Medicare beneficiaries in the area, taking into account all of the above issues. This is a subjective determination and will be based upon the perceptions of those interviewed and the judgement of the evaluators. The key informants described above will be asked to evaluate how effective they believe the S/HMO has been in terms of marketing its product. This includes whether: they like the advertising, the appropriate groups have been targeted, the appropriate amount of resources were used, the S/HMO had the expertise, the strategies were appropriate in view of the competitive environment, and what should be done in the future to market S/HMOs. The issue examined is whether low enrollment rates in S/HMOs are associated with ineffective marketing strategies including the failure to differentiate the product more than lack of interest in enrollment by seniors.

ORGANIZATION, MANAGEMENT, AND FINANCING EFFECTIVENESS

This study will compare the organizational structure, goals, management, financing, and technologies across the four S/HMOs. This portion of the evaluation will be conducted at six month intervals over a two year time period beginning in the Fall of 1986 to take into account the evolutionary nature of the S/HMOs. This analysis will describe the four different models and the features unique to the developmental process at each site. At the same time, an analysis of the similar features and comparable strategies used by the S/HMOs will be prepared. Those characteristics and strategies that are perceived to be effective and those that are problematic will be identified.

Two papers will be prepared. The first will be at the end of the first year of the evaluation in the summer of 1987. It will serve as an interim report and be based on data collected from two site visits. The second report will be prepared a year later. It will compare all four S/HMOs over the entire period of the evaluation on the organizational dimensions.

Data for this analysis will be based upon two different sets of interviews, plan documents, and other secondary data sources. The first source will be an extensive set of interviews with officials formally associated with each of the S/HMOs. All managers, key professional staff including the medical director, utilization review coordinator, membership services director, fiscal administrator, marketing and public relations director, case manager coordinator, and other such S/HMO personnel will be

interviewed. The directors of all major provider services, whether staff members or contractors, will be interviewed including the hospital administrator, medical director, and directors of chronic care providers. Selected board members from the S/HMO board as well as the board of the sponsoring organization (where applicable) will be interviewed.

The second set of interviews will be with individuals not directly associated with the S/HMO. This set of interviews will be selected by the reputational method described in the marketing section. A triangulation method will be used to compare recommendations for key informants from a variety of sources. Those individuals who receive several recommendations and/or who appear to have critical influence in the community and information about the S/HMOs will be selected for interviews. Selected individuals may be interviewed repeatedly at the different site visits. Those individuals selected for these interviews will be representatives of senior groups, unions, employers, politicians, major competitors (HMOs, hospitals, or physician groups), religious leaders, public officials, or other groups. An interview guide of general topics and key questions has been developed (See Appendix N). The guide serves as a checklist and a starting point for the interviews. While notes will be kept from each of the S/HMO site visits, only the two comparative reports will be prepared as described above.

Documents and reports will be collected from the S/HMOs over the course of the study including: statistical and financial reports, quarterly reports, actuarial analyses, position papers, in-house memoranda, newspaper articles, and pertinent correspondence with federal and state agencies. Additional documents will also be collected from the S/HMOs including: articles of incorporation, organizational charts, protocols, contracts, written procedures, manuals, and applications to federal and state agencies. Documents and reports from sources external to the S/HMO will also be collected including reports and audit data from federal and state agencies; reports or evaluations by outside organizations such as senior groups; data on bidding arrangements or contract offers by providers, unions, employers, or competitors from informants; and other data from informants.

The basic focus of the case studies is to identify those organizational, managerial, and financial characteristics and strategies that contribute to a successful S/HMO or creates substantial barriers to success. Success is measured in terms of outcomes toward accomplishing the goals set for the program:

- to attract enrollees and meet a minimum target enrollement;
- to prevent adverse selection;
- to control hospital and physician utilization within limits typical of other HMOs;
- to control chronic care utilization within a level projected for in the S/HMO budget;
- to have low disenrollment rates and high consumer satisfaction rates;
- to provide high quality of care;
- to assure access to appropriate care services for all in need;
- to keep overall organizational costs within the totals projected in the budget.

While these objectives are being measured by various quantitative aspects of the evaluation, the case studies will qualitatively examine whether the S/HMOs met their objectives and what factors are perceived by the S/HMOs and other key informants described above to have contributed to detracted from meeting the objectives. Where possible, perceptions relative to success or failure will be compared with objective measures of success or failure.

The following discussion describes the major issues in each area that will be examined and identifies the specific data types and sources that will be analysed. The findings and conclusions drawn relative to each issue studied will be based on the data from all sources described in this section.

Organizational Goals

The major goals of the S/HMOs are important in influencing organizational behavior and maintenance or survival. The variety of goals held by the various board and staff (managerial and professional) of the S/HMOs and their sponsoring or partner organizations will be collected through interviews with these individuals. These goals are expected to change over time and these changes in goals will also be collected and described based on interview data. The major goals we will examine are those associated with: system maintenance, access to services, convenience, quality, provider relations, community relations, and political advocacy goals. Other goals not anticipated will also be collected through open ended questions with the key S/HMO informants. The survival goals will be examined by category such as the desire to be a free-standing full service federally qualified HMO, to become an integral part of an existing HMO, to affect change in existing HMOs (i.e. encourage them to add long term care benefits), to be a specialty HMO providing services to Medicare beneficiaries, or other possible options.

Responses to questions about organization goals will be analyzed qualitatively to determine: whether there are general concensus in goals within each S/HMO and across S/HMOs; whether there are special goals emphasized by specific categories of S/HMO representatives (e.g. providers); and are there competing or contradictory goals between groups or between the S/HMO and its sponsoring organization or partners. We will determine whether there is an association between those organizations with conflicting goals between the S/HMO and sponsoring or partner corporations or other groups within the S/HMO and poor performance outcomes, in terms of financial data or enrollment targets (using data collected from the previous analysis). Another outcome that will be examined is the overall S/HMO consumer satisfaction scores collected from the consumer satisfaction survey described in a previous section. Relatively low consumer satisfaction scores of a S/HMO in comparison with other S/HMOs (if significant differences are found across S/HMOs) will be compared with any findings of goal conflict by S/HMO participants.

Organizational Arrangements

The first major issue is what formal organizational features contribute to the success or creates substantial barriers for success of the S/HMOs. Previous work by Brandeis has described the formal social structure of each S/HMO in detail. Our initial site visits identified some problems in organizational structure that were considered serious potential barriers to the viability of the S/HMOs. We will ask questions about those characteristics to determine the extent to which structural arrangements were perceived to contribute or detract from the operations of the S/HMO.

For example, to what extent was the S/HMO organization controlled by the sponsoring organization (parent corporation) or partners so that independent decisions that were needed for the success of the S/HMO had to be subordinated to the overall goals of the parent organization? At one S/HMO, lack of committment to the S/HMO concept by the parent organization may have been a substantial problem that failed to authorize appropriate resources for initiating basic planning and marketing activities. In other cases, board members appear uninformed and may even have conflicts of interest. Were the board members knowledgeable about S/HMO organization, goals, responsibilities and able to make informed decisions about its operation or were most decisions made by the administrators of the parent organization or by S/HMO administrators? Did length of time in previous operations before the S/HMO affect the reputation either positively or negatively? Did reputation of the parent organization affect the marketability and management of the

S/HMO? In some cases, for example, the reputation for serving low income or working class clients may have been negative factors in establishing the type of formal and informal working relationships needed.

- What formal relationships with the S/HMO and other providers or organizations either assisted the S/HMOs or caused problems for the operation of the S/HMOs? Of particular importance are arrangements between S/HMOs, physician groups, hospitals, nursing homes, and community based long term care providers. To what extent were those S/HMOs that had to establish a new HMO at a distinct disadvantage in not having internal expertise in financing, marketing, membership services, provider arrangements, and other functions? The S/HMOs that have a direct relationship with providers (such as hospital and physicians) may have greater control over utilization than those S/HMOs that have established contractual relationships with providers. This descriptive effort focus on documents, protocols, correspondence, and other material from the S/HMOs and their partners and providers to identify both problems and positive features.

The historical events that established the formal relationships of the S/HMO will be briefly described where problems occurred that may have shaped the operation of the S/HMOS. For example, this is expected to be particularly important where disputes occurred in the selection of partners. In one S/HMO, the disputes that arose in selecting the physician group may have negatively affected the reputation of the S/HMO, the community cooperation patterns, marketability, and decisions about the hospital relationship. The historical relationships will be primarily studied through a review of S/HMO historical documents and reports. In addition, interviews with key informants who were involved in the original planning and decision making regarding the S/HMO will be conducted by asking questions about the planning process and the formal decisions that were made. The informants will be asked about positive and negative aspects of the formal relationships that were established and to identify any particular problems in the process that may influence not only the structure, but also the goals, the marketing of the S/hMO plan, and the working relationships of the S/HMO. Any relevant documents that are not available through the S/HMO will also be collected from informants, such as correspondence over disputes 9e.g. bidding procedures. An analysis of any serious problems in the procedures that have created structural problems as well as other problems in goals, marketing, and relationships will be conducted.

The establishment of formal or informal working relationships between the S/HMOs and providers to provide integrated delivery systems are also be important. For example,

a hospital or physician group (whether directly managed by or contracting with the S/HMO) may view the arrangement with the S/HMO as a means of increasing its revenue while the S/HMO is under constraints to lower costs. Affiliation with teaching hospitals may enhance the S/HMOs quality of care and its image among enrollees, but such arrangements may conflict with the S/HMOs' cost containment efforts (Bonanno & Wetle, 1984). These working relationships will be carefully examined through interviews with S/HMO representatives (including managers and board members), representatives of the providers of services to the S/HMO, and individuals external to the S/HMO who are knowledgable about the working relationships such as senior groups. Perceptions by those involved of problems as well as successes in collaboration will be described and analyzed. Any documents or correspondence from either the S/HMO or key informants will be collected that would provide additional information on the S/HMO relationships with providers.

The establishment of formal and informal working relationships within the S/HMO organization is also of importance to the success or problems of a S/HMO. For example, some S/HMO administrators have the financial and marketing staff report directly to them, while in other arrangements the administrators do not have formal authority over these key functions. This type of organizational arrangement with limited formal authority could be very problematic, or informal relationships could be developed that overcome the formal limits on administrative authority. These types of arrangements will be described within each S/hMO based on documents including the formal organizational charts. Interviews with S/HMO staff within each organization (described above) including board members, top S/HMO managers, and program directors will be conducted to identify the formal and informal relationships and the problems created or advantages that occur. Changes over time since the S/HMO first started will also be collected from interviews and documents in terms of the type of changes, when they occurred and the perceived effects of the changes.

The relationship between the formal structure of the S/HMO and outcomes of the S/HMO will be examined. In particular, we will examine the differences in specific outcome measures of those S/HMOs who are associated with experienced HMO organizations and those S/HMOs who were long term care organizations. The following financial outcome measures will be examined: total start-up costs during the first year, cost per enrollee, administrative costs per enrollee, hospital utilization per 1000 enrollees, physician visits per enrollee, and chronic care costs per eligible enrollee. (The sources of data for these measures are discussed in the financial section). The other outcome measure examined will be the number of enrollees in

relation to the target enrollment.

Financial Arrangements

This study will describe and analyze financial policies and financial management decisions of the S/HMOs and their positive or negative effects on financial outcomes. The following financial outcome measures will be collected: total start-up costs during the first year of S/HMO operation, aggregate cost data per enrollee, costs per unit of service, administrative costs per enrollee, total marketing costs per actual and per target enrollee, total Medicare costs per enrollee, and total overall costs. In addition, hospital utilization costs per 1000 enrollees, physician costs per visit, and chronic care costs per eligible enrollee. These outcome measures will be collected from S/HMO quarterly reports and financial records, state and federal audit data from the S/HMOs, and other secondary data sources. The financial outcomes will be compared across the four S/HMOs and to the extent possible with the outcomes of other new Medicare HMO programs. Financial data from the annual reports of new HMOs will be collected from the Federal Office of HMOs. In this way, the S/HMOs, and other comparable HMOs can be categorized into those that are high and low on the above outcome measures. The ultimate test of those S/HMOs that are successful is whether the S/HMOs can assume full financial risk and continue to be financially viable.

Data will be collected from the S/HMOs comparing the premium levels, cost sharing formulas with enrollees, and risk sharing arrangements. Other critical fiscal data include the reimbursement rates and methodologies used for various provider groups, use of the financial resources within federal guidelines, and internal fiscal control mechanisms. Whether or not the premiums and cost sharing provisions are set at a level which covered the costs of the long term care services offered by the S/HMOs will examined using S/HMO financial report data. The risk sharing arrangements will also be described to determine what incentives were built into the arrangements. Data for these measures will come from S/HMO quarterly reports, financial reports, and audit data.

The interviews of S/HMO financial management will examine the association between these financial policy decisions and the financial outcomes described above. We will look for strong associations between fiscal policy and management decisions and outcomes. For example, one S/HMO appears to have made decisions to spend limited amounts of financial resources on marketing and planning, and this may have had negative effects on enrollment and cost per enrollee. Would other decisions in the initial phase of the project including greater expenditures on marketing

and lower premium prices have had a more positive financial outcome based on the judgment of the S/HMO officials and the evaluators? Another issue is to what extent the financial problems of the parent corporations in some S/HMOs have had on S/HMO financial decision making. Conservative financial decisions may not have allowed sufficient funds to be spent appropriately for marketing and sales. In other cases, financial decisions to establish a large case management staff before there was sufficient numbers of clients needing case management services may have been made rather than allocating the resources to marketing and sales. These internal financial decisions will be analyzed using available data and the judgment of the interviewees and the evaluators. And finally, we will evaluate what financial policy decisions were associated with poorer financial outcomes as expected: reimbursement of providers on a cost basis, low premiums, low cost sharing, low risk sharing on the part of the S/HMOs and low marketing costs.

Managerial Issues

The managerial issues to be studied in the case studies cover the following areas: management expertise, managerial effectiveness, staffing patterns, plan benefits decisions, enrollment and queuing procedures, and quality assurance. (Case management is discusssed in the following section). An evaluation of these areas will be conducted by examining both the perceptions obtained from interviews of key informants about what factors contribute to success or represent substantial problems. We will also compare identified success and problems. We will also compare identified successes and problems with selected outcome indicators for each S/HMO. Comparisons of findings in these areas will also be made across S/HMOs to determine which S/HMOs were similar and different on these features. Judgements will be made about whether relationships between poor managerial expertise (education and experience) and poor outcome measures such as lower enrollment, higher start-up and enrollee costs, higher management costs and greater personnel turnover can be identified.

The first issue is one of managerial expertise. The managerial expertise in terms of the following: years of management experiences in various types of positions related to S/HMO programs (i.e., HMO and long term care management), formal education in these health services management or related areas, and finally perceived knowledge of the field of HMO and long term care management. An assessment of the expertise of the top S/HMO managers will be conducted by reviewing resumes, interviewing the managers, and by interviewing those who work with the managers of the S/HMO.

The internal management structure of the S/HMOs will be studied. The qualifications of all personnel, their job descriptions, and the relationships among staff, providers, management of the S/HMOs and its contracting agencies and its personnel will be reviewed where applicable. The management study will focus on channels of formal and informal authority as well as relationships and communications. Where these formal relationships are problematic for the managers or staff, based upon interviews with S/HMO managers, providers, and staff, these problems will be identified. Turnover rates among staff will be examined and used as an outcome indicator of managerial skill. Where turnover rates are high, this may be one indicator of poor hiring practices or poor management practices. Perceptions of management effectiveness relative to personnel will be described. A series of interviews will be conducted with representatives from different levels of staff and different staff members within the S/HMO organizations. The perceptions of providers, provider groups, state and federal officials, local officials from health and aging agencies, and other interested parties from outside the S/HMO will be assessed. Differences in responses within a S/HMO and across S/HMO sites will be analyzed.

Each S/HMO has a wide range of different benefits under the community long term care services component of its program. The benefits and premiums will be described in detail along with any changes that are made during the course of the projects. The process for making decisions about the benefits will be reviewed and perceptions analyzed. Benefit limitations on chronic care services and the maximum annual benefit for chronic care in each plan be compared. Representatives from the plans will be interviewed as well as representatives of consumer associations, local agencies, and competing plans to determine whether they consider the scope of benefits appropriate, attractive to potential enrollees, and whether the benefit limitations were appropriate. These informants will be asked what changes in the benefit packages and premiums would make the S/HMOs more attractive in the marketplace. Differences in responses within a S/HMO and across S/HMO sites will be analyzed.

The enrollment and queuing procedures are critical issues. The enrollment procedures vary greatly with some S/HMOs conducting no screening and queuing while other S/HMOs have used rigorous procedures. Who does the enrollment, what forms are required, how are inquiries about the S/HMO handled, and how are decisions made about who should be enrolled and who should be placed in the queue? Are applicants accepted on a first come-first served basis? How are consumers notified about their enrollment status? What queuing procedures are used, and are these used appropriately to prevent biased selection? Interviews

on enrollment and queuing procedures will be conducted with staff and officials of the S/HMO, representatives of consumer groups, local agency representatives such as those in the Area Agency on Aging and Department of Health, state and federal officials, union and employer representatives and providers. The findings will be summarized to determine whether there is a concensus against membership screening and using queuing procedures. It is expected that most informants will indicate strong objections to those S/HMOs that use screening and queuing procedures.

The final management issue to be examined is the quality assurance activities within the S/HMOs. Each organization is responsible for some type of quality assurance system, and these may be mandated in part by state and federal regulations. Documents on procedures and audit processes will be collected. Interviews with state officials, S/HMO officials and staff, and providers offering services will be used to collect data on the process and outcomes of the quality assurance system. Conformance with mandates will be reviewed and problems identified. Procedures which are perceived by the informants to be most effective and ineffective will be described. Procedures which are related to compliance or noncompliance with state and federal guidelines will also be identified.

Technologies

Two areas of technology will be examined in this evaluation of the S/HMOs: management information systems and utilization control procedures including contractual incentives and physician management to control utilization.

The management information systems planned by the S/HMOs are generally more comprehensive than those used by HMOs because individual client data on health status, utilization, and costs are expected to be collected. Some S/HMOs have used existing data reporting systems while others have designed new management information systems specifically for the S/HMO. The quality and quantity of actual data placed on the MIS systems will be compared across the four sites. This information will be collected in conjunction with general data collection of individual S/HMO client records for the evaluation. Error rates can be examined by a study of a small sample of original HSF and CAF records in comparison to the computer printout of such records. A qualitative assessment will be made of the problem areas, the state of the technology used, and the useability and satisfaction of the s/HMO with the data system. The cost effectiveness of the system will be examined using data from the S/HMOs regarding the start-up costs of the system, the on-going cost of using the system, the cost per enrollee, and the general

satisfaction with the system.

Utilization controls are among the most important concerns for assuring financial solvency of prepaid plans. Some Medicare HMO demonstration projects have reported start-up and cost-overrun problems and particularly so in their utilization review procedures. Several of these projects were able to bring utilization rates and out-of-plan use down to initial projected levels by instituting utilization review and enrollee and physician education programs (Fallon Community Health Plan, 1981; Lamb & Greenlick, 1981; Bonanno & Wetle, 1984). What are the established procedures and processes used? Are the procedures based on those commonly used by HMOs or PPOs or have special procedures been designed (as determined from interviews of HMO managers)? Have they been implemented as intended or have modifications been made in the procedures? What staff are responsible for implementing these procedures and what is their training and expertise in the area of utilization controls? To what extent are physicians used for monitoring utilization and managing physician use? What kind of system does the S/HMO have (i.e., computerized or a manual system) for examining utilization patterns by individual enrollees, individual providers, and case managers within the S/HMOs and how does the system work? Is the system able to identify outliers, and what procedures are used for outliers who are either enrollees or providers? What are the problems with the system and what types of changes could be made to make improvements? How long did it take system to begin working as planned? The data on these procedures will involve interviews with S/HMO staff and those providers who are reviewers and/or are subject to review. Comparative data on HMO practices will be obtained by interviews of HMO officials experienced in utilization control procedures.

In some situations, providers have been given cost reimbursement by the S/HMOs rather than placing the provider on a fixed contract with a risk sharing arrangement. This situation can be particularly problematic where physicians are overutilizers and where such physicians have a substantial number of hospital admissions. These problems have been identified in studies of open panel HMOs and PPOs (RAND, 1984). As Bonanno & Wetle (1984) point out, the start-up costs and fixed costs of decentralized models or independent practice models (IPAs) have been smaller, but such plans have been less effective than the centralized integrated HMOs in reviewing and modifying patterns of practice and institutional placement (Kirchner, 1982). Some contract provisions are more difficult to enforce than others, and may depend upon the ability of the S/HMO to conduct utilization reviews. Interviews of S/HMO managers and providers for the S/HMO will be conducted to determine the effects of the provider reimbursement incentives in controlling utilization in

comparison or in addition to the utilization review procedures that are used by the S/HMO. Differences in arrangements across S/HMOs will be compared along with the general perceptions of S/HMO managers about the most effective approaches to use to control over and under utilization.

In summary, the case studies will examine each S/HMO separately and compare the four S/HMOs. Data will be primarily subjective from interviews of a broad variety of individuals. Where possible, the effects of S/HMO organization, goals, financing, management and technologies will be compared with quantitative outcome measures. This overall portion of the evaluation will be used to examine relationships among a number of factors that may lead to further hypotheses testing. The overall effort is designed to examine those features that are associated with effective S/HMOs as judged by indicators of enrollment, costs, access, and quality.

CASE MANAGEMENT

The S/HMO's case management system is designed to reduce fragmentation in service delivery and to integrate acute care and long-term care services. The S/HMO's case managers assess enrollees' functional status, develop individualized care plans, serve as client advocates, coordinate services, and monitor service use. These functions place the case manager in the role of resource allocator. Since expenditures for the expanded long-term care benefit are constrained, S/HMO case managers must target these resources in the most cost-effective manner so as to produce acceptable clinical outcomes for enrollees. Thus, the process by which the S/HMO case managers translate enrollee needs into services is a critical element in the S/HMO delivery model. For example, from the initial site visits, two sites were found to include hospital utilization review and discharge planning in their case management activities, while two sites do not include such activities generally. In addition, some case managers are actively involved in membership services and public relations and other nonclient specific service activities.

The evaluation of S/HMO case management will be divided into three major areas: a case management process evaluation; a case management task analysis; and a case management outcome evaluation. Each aspect of the evaluation is briefly described below.

The Case Management Process Evaluation

As a beginning step in developing a conceptual model of case management in the S/HMOs, the various components of case management and the activities undertaken at each site will be

identified. To obtain this information, key S/HMO personnel and the case managers will be interviewed on a number of topics. What type of personnel perform which case management activities? How is supervision arranged? How does the S/HMO determine which enrollees are case managed? Who within the S/HMO makes this determination? How is the case management process connected to the utilization of medical (acute and ambulatory) and long-term care services? What barriers prevent S/HMO's from meeting service needs identified by case managers? How does S/HMO attempt to overcome these barriers? What is the case manager's scope of authority?

Special emphasis will be placed on questions related to case management decision-making and resource allocation. Under the pressure of fixed budget financing and responsibility for the delivery of comprehensive services, a S/HMO might encounter disincentives which jeopardize quality care. Further, even though case management is designed to overcome problems related to obtaining appropriate care, barriers, such as lack of information, bureaucratic obstacles, and the cost of services are likely to thwart the achievement of case management objectives. The impact of these forces on case management practice will be documented as part of the process evaluation using data from interviews of S/HMO personnel.

To supplement data from the in-depth interviews, the process evaluation will also employ a participant observation methodology to gather qualitative data that provides a detailed understanding of case management within and across the demonstration sites. Those observed will be individuals who are directly involved in providing case management and its supervision. Case management meetings will also be observed at each site. At each site, two days will be spent using participant observation techniques to document case management activities. These observations should provide valuable non-quantifiable insights into each site's case management philosophy and procedures.

Data collection for the case study material will occur at two points in time (in the Fall of 1986 and the Spring of 1988). The first data collection will obtain data that will not only describe the case management process but will serve as the basis for designing the task and cost studies described below. The second data collection activity will be conducted near the end of the demonstration period in order to capture changes that may evolve in the case managers' roles as the projects experience phenomena such as increased case loads and cost overruns or cost savings.

Case Management Task Analysis

This aspect of the evaluation will provide a quantitative description of the case management function at each site. All case managers and supervisory staff will participate in a time study which will allocate time across different case management activities. The specific activities to be detailed in the time study will be developed and refined based on information obtained during the in-person interviews with case management staff and observations of staff activities.

The case management time study will be conducted over a two week period of time. Each staff person will be provided with a daily sheet on which he/she will indicate the amount of time spent on a list of specified activities. The Time Study will be conducted at two points in time (early Spring of 1987 and 1988). It is anticipated that case management activities and the proportion of time spent on various activities may vary from site to site and may change over time as the S/HMOs refine their operations.

The Case Management Outcomes Evaluation

In large measure, case management outcomes are addressed in the analysis of S/HMO impacts on service utilization and costs. To supplement this analysis and provide further understanding of case management issues, three broad questions will be evaluated: (1) Who in the S/HMO receives case management services; (2) How effectively are the S/HMO enrollees service needs met? and (3) What are the costs of case management?

Who Receives Case Management Services? It is important to understand how enrollees who receive case management services are diffeent from those who do not receive case management. Identifying key characteristics of those enrollees who receive case management services will validate the intent and purpose of case management, as specified by key personnel in each S/HMO. In addition, major differences between enrollees who receive case management and enrollees who do not receive case management will guide the analysis and interpretation of the service utilization and cost outcomes both within-site and across sites.

Data for the analysis of who receives case management services in the S/HMO will be obtained from the HSF and/or CAF instruments which are administered to all enrollees at baseline and four reassessment intervals. Within each site, analysis will be conducted of characteristics of enrollees who receive case management when initially assessed, as well as enrollees who receive case management subsequently in order to determine if the target group for case management services changes over time.

Cross-site analysis will also be undertaken to determine if there are differences between sites in the characteristics of enrollees who receive case management services both initially and over time.

- How Effectively are Enrollees' Service Needs Met? The availability of individualized written care plans will permit an evaluation of several important case management issues related to how effectively service needs are being met. Questions to be addressed include to what extent are care plans related to enrollee level of impairment and capacity of the informal caregiving network? Do enrollees of similar descriptions receive similar amounts of services (e.g., hours of personal care)? Do care plans result in services actually being awarded and consumed? Do utilization patterns reflect care plans? Are there precipitating stressful events (e.g., medical injury, loss of an informal caregiver), which trigger the need for case management?

This analysis will be conducted by abstracting the care plans of a purposive sample of approximately 25-50 cases per site in the Spring of 1987. For this in-depth analysis, we plan to select enrollees with one or two specific health conditions, e.g., dementia and stroke residual.

What are the Costs of Case Management? Evaluations of other long-term care projects have found that case management is a labor intensive and potentially costly activity. Thus, a special study is proposed to answer the question: just how much does case management in the S/HMO cost? The study will identify, isolate, and measure the costs of the case management process itself. The time period for this analysis is planned for Spring 1987 and 1988 when the caseload is stable and case managers are not overly concerned with implementation issues.

This study builds on data obtained from two earlier aspects of the case management evaluation, including information from the in-depth interviews with case management staff about their activities and information from the Case Management Time Study.

Briefly, the study of the costs of case management will proceed by the following steps:

- analysis of the accounting systems in each project to ensure that it is possible to gather comparable cost information for all projects;

- determination of which costs should be included for each project, based on the discussion of case management activities and process with project directors and case management staff including related activities of hospital

utilization control and discharge planning. Direct case management costs related to individuals clients will be separated from other nonclient related activities carried out by case managers (e.g. public relations).

- collection of specific case management cost information for each project during the time period in question;

- allocation of costs across overall case management activities based on that time allocation study conducted with case management staff during the same representative time periods;

- determination of average monthly caseload for all case management staff for each S/HMO during the time in question; and

- division of total direct and indirect client-specific case management costs by average number of clients per month to arrive at the costs of case management on an average per-client per-month basis.

This information will be used to compare average case management cost per client across demonstration sites. In addition, these costs will be used in the within-site and cross-site analysis of "incremental" costs not traditionally covered under Medicare.

NOTES

[1] An additional health care financing system available to persons meeting income eligibility requirements is Medicaid. The original evaluation design had planned to examine the effectiveness of the S/HMOs in serving the population receiving Medicaid reimbursed services. The S/HMOS have, in fact, developed contractual agreements with Medicaid to receive Medicaid payments from the states as premiums for eligible individuals. Enrollments of Medicaid eligible persons in the S/HMO health plans, however, has been limited. If current trends continue there will be fewer than 100 Medicaid eligible persons enrolled at each site even after they reach their planned total enrollments. Such small numbers have extremely limited statistical utility even if data are pooled across all sites for analysis. Consequently, categorically eligible Medicaid recipients have been excluded from the S/HMO enrollee and comparison group samples. Other analytical methods will be used to study the Medicaid enrollees within the S/HMO and its community.

[2] Historically HMOs offered supplemental coverage to basic Medicare Part A and B coverage, and in addition they have provided services on and fee-for-service basis. Such health plans have been omitted from this study because they are not considered to be very different from an other fee-for-service coverage. HMOs receiving capitated payments for Medicare enrollees are included because this structure is thought to better reflect the future financial structure of Medicare.

[3] While equal sample sizes for each S/HMO site might normally be expected to produce maximum sample efficiency, they do not in this instance save much in data collection expenses as the cost for locating and classifying these cases is incurred in developing the impaired group. If the cost of monitoring the total FFS well group over time proves to be within the fieldwork budget all these cases will be retained in the analysis.

[4] The inclusions and language changes made on our screening forms are designed to more explicitly describe conditions that the S/HMO case managers identified as issues frequently requiring telephone callbacks for clarification when using the S/HMO screening forms; and to add items such as cognitive impairment not expressly included on the S/HMO forms. The items eliminated were those not used by the sites or the National Long Term Care Survey to classify the functional status of the respondents. The changes made were reviewed by

the S/HMO data quality committee. They concurred with the changes we have incorporated into our criteria, but generally did not incorporate these changes into their own forms or procedures-HMO; cross-site data base all argue strongly against pursuing this analysis.

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